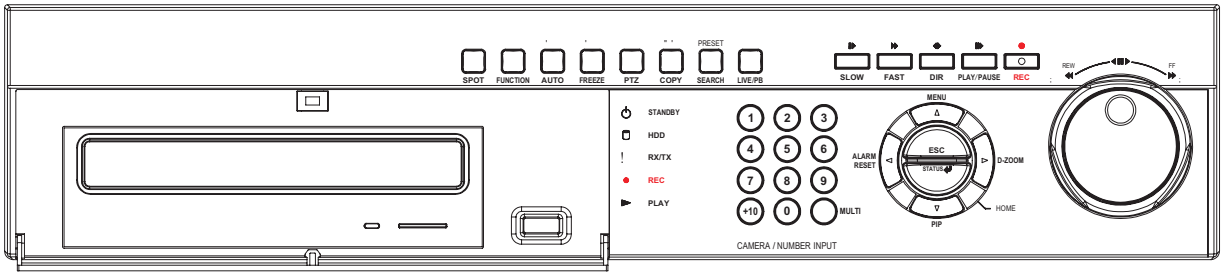
INSTRUCTIONS



DVR-4N
DVR-8N
DVR-16N

4/8/16 Camera DVR

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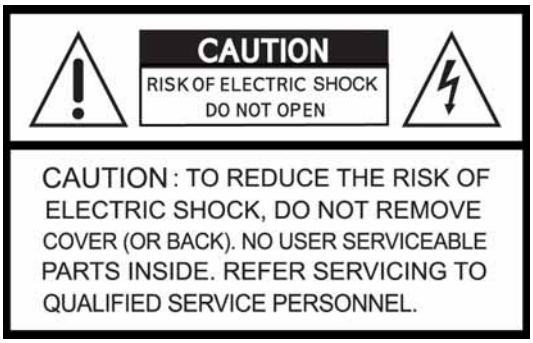
WARNING


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of unprotected "Dangerous voltage" within the product's enclosure that may be strong enough to cause a risk of electric shock.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

NOTE: This equipment has been tested and found to comply with the limits for a class digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office , your household waste disposal service or the shop where you purchased the product.

PRECAUTION

All the safety and operating instructions must be read before the unit is operated.

- **Make sure to switch the power off before you install the DVR.**
- **There is the danger of an electric shock if the DVR is opened by an unqualified service engineer or installer.**
- **Avoid using the DVR outside of the reference temperature and humidity indicated in the specification.**
- **Avoid exposing the DVR to violent movement or vibration.**
- **Do not use or store the DVR in direct sunlight or near to any source of heat.**
- **Do not place any object into the holes used for air circulation.**
- **Always use the DVR in a well ventilated location to prevent overheating.**
- **Risk of explosion if battery is replaced by an incorrect type.**
- **Dispose of used batteries according to the instructions.**
- **When the system is overheated, the below warning message will be displayed at the monitor.**

" SYSTEM IS OVERHEATED, TURN THE POWER OFF AND CHECK COOLING FAN" In this case, do the power off right away and check the cooling fan working.

- **The HDD is recommended to use enhanced IDE Hard Disc Drive type made by Maxtor, Western Digital, Hitachi and IBM.**

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The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information herein.

VER.: 0.1, P/N: 040136

Chapter 1 Features

Operation

Playback, recording, backup and transmission simultaneously
Real time single or multi-screen display
Pan & Tilt, 2X/4X digital zoom and PIP display
Easy operation by Jog shuttle, IR remote controller, external keypad controller and USB 2.0 Mouse
Hidden camera option (covert)
User-friendly setup menu and operation

Playback

Multi-screen playback (Full, Quad,4/ 9/16 split)
Search by date, time and camera
Preview window on event search mode
Playback mode(frame/ field) setup automatically

Recording

Select of the recording quality grade for each channel
Individual camera frame rate can be set by user
The recording speed of max.120 images per second (NTSC)
Manual, schedule and event recording
Pre & Post-alarm recording
Select of the recording image size for each channel
4 channels audio recording
Select of the event mode for each channel

Network

Live and playback viewing
Remote control on a networked PC with the exclusive client viewer (The viewer software is supplied for free.)
Flexible connections - 10/ 100 Mbps Ethernet/ ADSL
Up to 16 network users access simultaneously
Audio transmission between DVR and Client
Dynamic IP is available

FEATURES

Audio

4 channels audio recording in real time

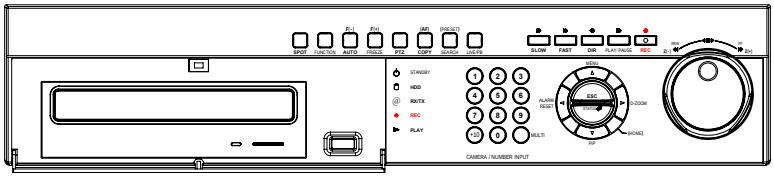
Copy

USB 2.0 external HDD
USB 2.0 memory stick
CD-RW/ DVD-RW (option)

General

Software downloading facility via network and USB memory stick
Auto detection of PAL / NTSC
Built-in hardware Watchdog
Automatic time adjustment through Network
VGA output for PC monitor(Option)
Optional Removable HDD,CD-RW or DVD-RW
Loop-through connections
Graphic User Interface for the MENU screen

Chapter 2 Packing Detail

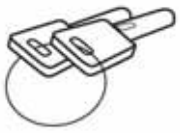


1. DVR

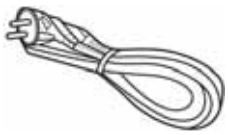
2. Network Viewer Program CD

3. User's Manual

4. Remote controller



5. R-HDD Rack Key (option)



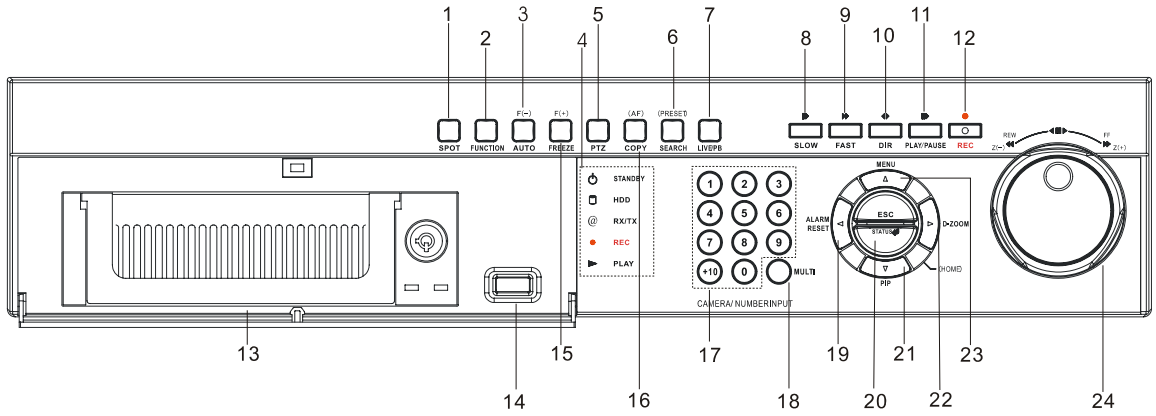
6. Power Cord

7. Battery

CONTENTS
1. DVR
2. Network Viewer Program CD
3. User's Manual
4. Remote Controller
5. R-HDD Rack Key(option)
6. Power Cord
7. Batteries

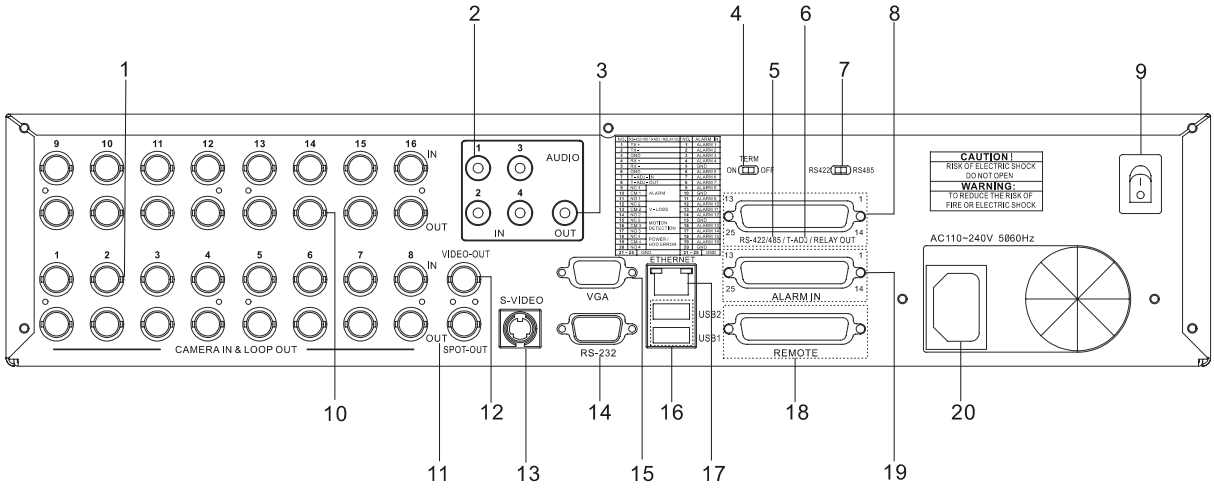
Chapter 3 Location and Control

3.1 FRONT PANEL CONTROLS



1 SPOT / ESC	Button to control spot monitor/ return to the previous menu
2 FUNCTION	Using this button when you select “USER” in Relay 4
3 AUTO / F / (-)	Button to begin the auto sequence mode/ decrease the value/ focus in PTZ mode
4 LED Display	Display of the status of power(STANDBY), HDD(HDD) , network(RX / TX),REC,PLAY(PLAYBACK)
5 PTZ	Button to control PTZ camera
6 SEARCH(PRESET)	Button to display the search menu/ preset in PTZ mode
7 LV / PB	Button to convert the screen into real view mode or into playback mode
8 SLOW(▮▶)	Button to slow down the playback speed
9 FAST(▶▶)	Button to speed up the playback speed
10 DIRECTION(◀▶)	Button to release the event signal/ move the left direction/ PAN left in PTZ mode
11 PLAY / PAUSE(▮▮▶)	Button to start the playback. If press again, a still picture is displayed during playback.
12 REC(●)	Button to begin and stop recording
13 R.HDD RACK	Removable HDD rack (Option: Built-in Removable HDD or CD-RW or DVD±RW)
14 USB port	USB 2.0 port to use a USB memory stick, Mouse or USB external devices
15 FREEZE / F / (+)	Button freeze image/ increase the value/ focus in PTZ mode
16 COPY(AF)	Button to display the copy menu/ automatically focus in PTZ mode
17 CHANNEL SELECT	Buttons to select the camera or input the password
18 MULTI	Multi-channel select button
19 ALARM RESET / ⬅	Button to release the event signal/ move the left direction/ PAN left in PTZ mode
20 ↵ / STATUS/ (HOME)	Button to enter the next step/ display the status/ return to home position in PTZ mode
21 PIP / ⬇	Button to control PIP function/ move to the lower direction/ TILT down in PTZ mode
22 D-ZOOM / ➡	Button to control the digital zoom/ move to the right direction/ PAN right in PTZ mode
23 MENU / ⬆	Button to display the setup menu/ move to the upper direction/ TILT up in PTZ mode
24 JOG SHUTTLE	To make easy search in playback and menu setup/ control the playback speed/ control the zoom of PTZ camera

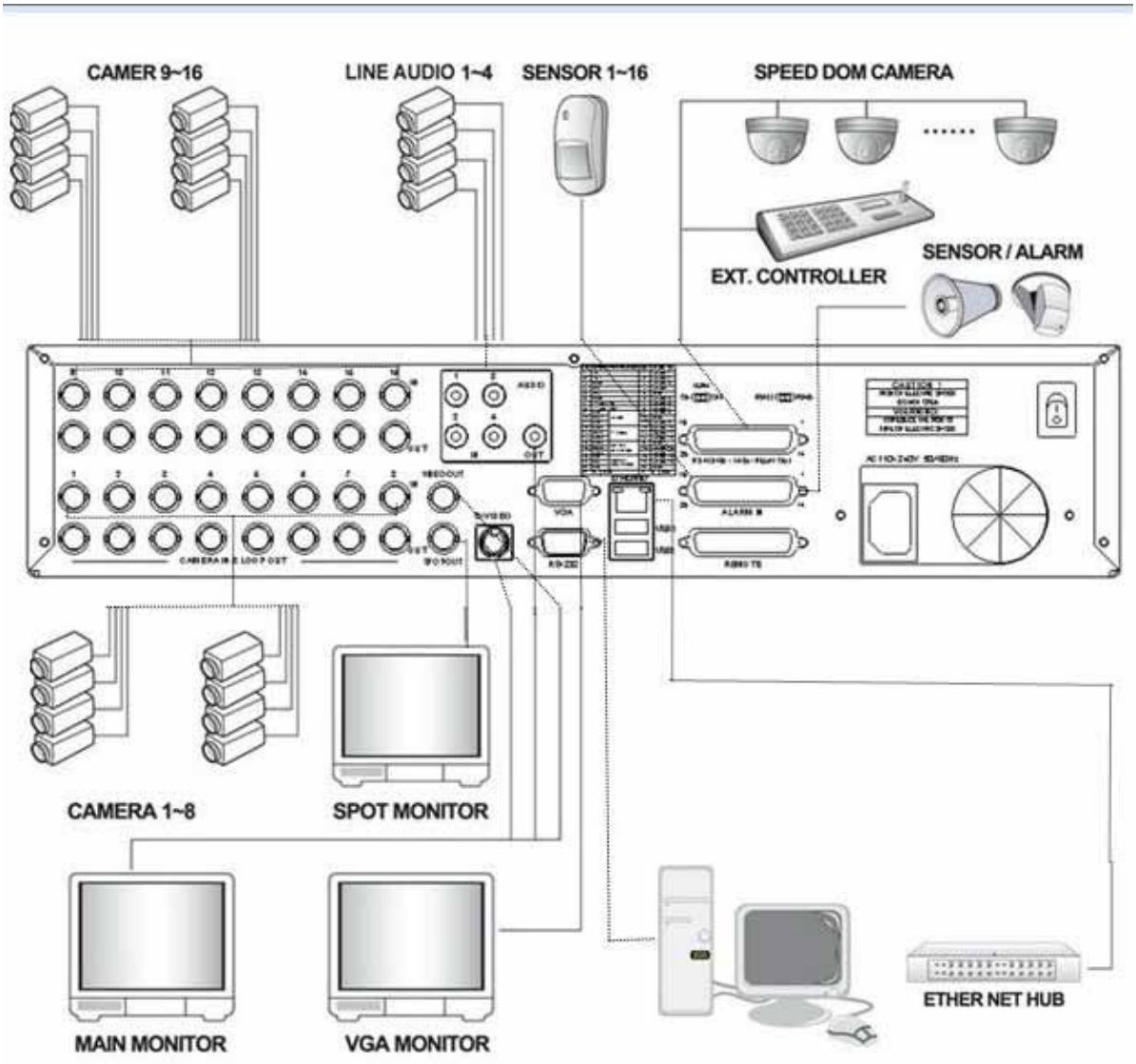
3.2 REAR PANEL CONNECTORS



Port Name	Description
1 CAMERA IN	BNC input ports for cameras
2 AUDIO IN	RCA input ports for an audio signal(4CH Line input)
3 AUDIO OUT	RCA output port for an audio signal
4 TERM ON / OFF	Switch to use the terminal block connectors of RS-422 or RS-485
5 T-ADJ	Input and output terminal blocks for time synchronization among DVR
6 RS-422 / 485	Terminal blocs of RS-422 or RS-485
7 422 / 485	Switch to convert into RS-422 or RS-485
8 RELAY OUT	4 relay output terminal blocks
9 POWER	POWER ON/OFF
10 CAMERA OUT	BNC output(looping) ports for cameras
11 SPOT OUT	BNC input port for spot monitor(Not used in all DVR models)
12 VIDEO OUT(Option)	BNC output port for the main monitor (Same as the RCA video output of the front panel)
13 S-VIDEO OUT	Connector for debugging. This DVR can be controlled by the other device through this connector(RS-232C).
14 SERIAL	Input and output terminal blocks for time synchronization among DVRs
15 VGA OUT	Output port for the VGA monitor This DVR is compatible with TFT LCD monitor in PAL mode.
16 ETHERNET	Port for 10/ 100Mbps Ethernet/ xDSL
17 USB1 / USB2	USB 2.0 ports to use USB memory stick, Mouse or the external devices
18 REMOTE	Reserved
19 ALARM IN	Input terminal blocks for alarm signals
20 POWER IN	Socket for a 220/ 110VAC power cord

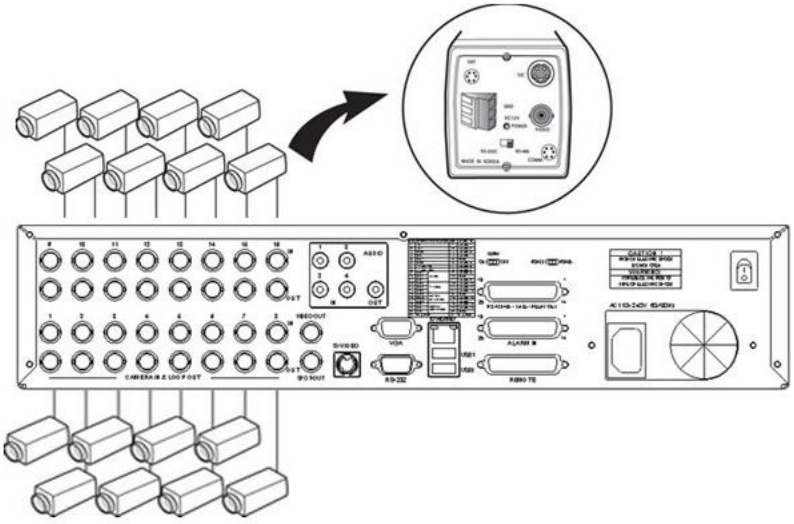
Chapter 4 Installation

4.1 TOTAL CONNECTION LAY-OUT



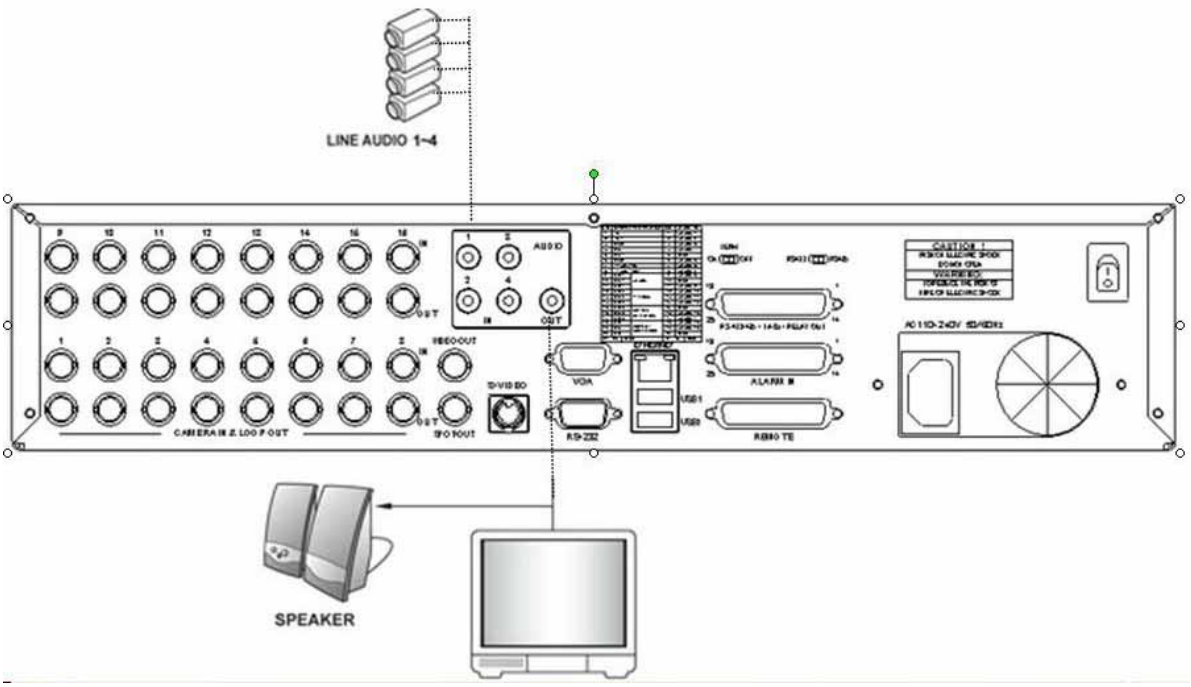
4.2 INDIVIDUAL CONNECTION

4.2.1 Camera



* Connect a female BNC connector of each camera to a male BNC connector, “CAMERA IN” port.
* Connect the looping BNC output to other inputs as required.

4.2.2 Audio (*Refer to the specification)



Audio Input
- AUDIO IN : Connect the RCA Line Jack of the relevant equipment (for example, a camera with a built-in microphone) to the AUDIO IN port.

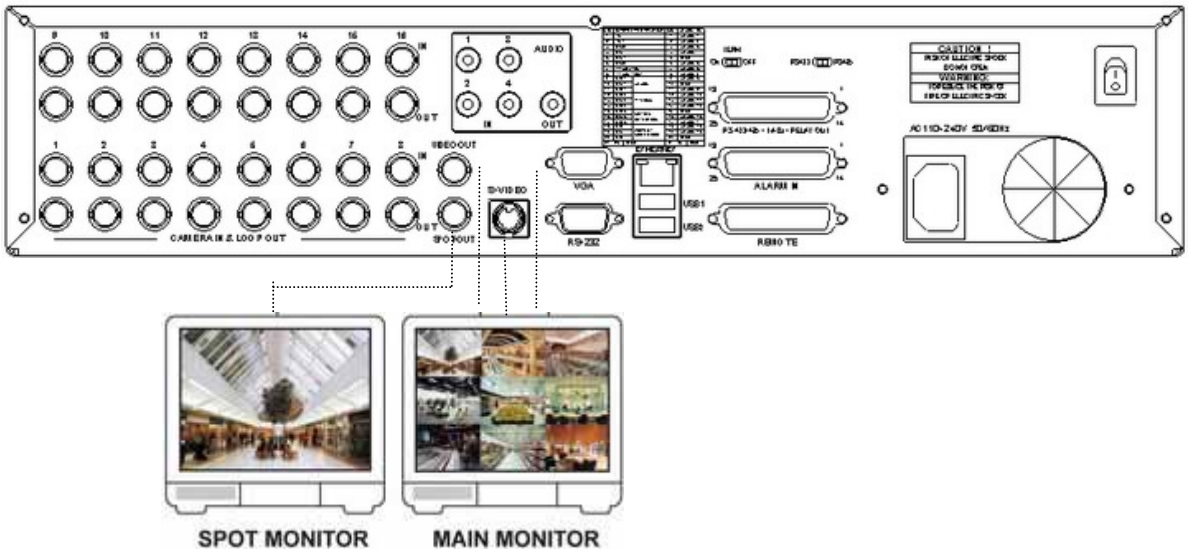
Audio Output
- AUDIO OUT : Connect the RCA Line output to a monitor with a built-in speaker.

NOTE

This DVR can be connected only with a line audio and not support a microphone for audio input and output. To record audio should be enable in the AUDIO setup at the MENU setup.

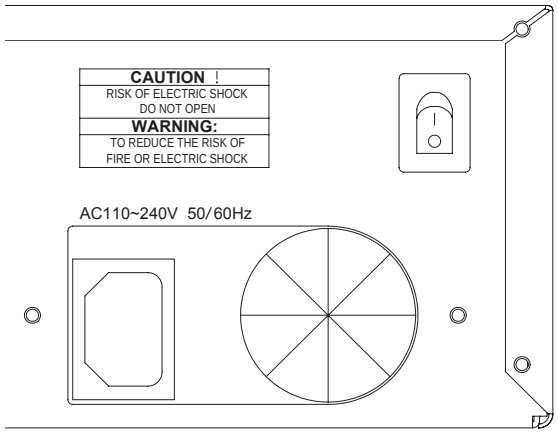
As the audio is linked to a camera, it is required that linked camera viewed, either in multi-screen view during playback to hear the audio.

4.2.3 Monitor



- Connect the female BNC for monitor output.
- Connect the male Y/C cable socket for S-VIDEO monitor output.

4.2.4 Power



- Auto-detect the correct voltage of power (110~240 VAC)
- Connect the power cord.

4.2.5 USB 2.0 ports

① Three USB ports are provided to connect a USB memory stick, external storage devices and CD-RW/DVD-RW for video clip copying. One USB port is on the front panel and the other two are on the rear panel.

② A USB mouse can be connected to one of the ports. You can use the mouse to navigate through the screens and menus much like you would on a computer.

Installation Process

Connect the desired device to the DVR, as shown above.

(For example, USB memory stick, mouse, external storage device etc.)

Note: 1. Most USB memory stick brands are compatible, problem occurs only to some brands. Therefore, when data is unable to be achieved from the USB memory stick, please try again using other brands.

2. Most CD-RW disks are compatible using CD-RW device, problem occurs only to some brands. Therefore, when data is unable to be achieved from the CD-RW DVR, please try again using other brand CD-RW disks.

3. When compatibility problem occurs using DVD-RW device, please try again using other brand DVD-RW disks (CDs not supported: DVD-R, DVD+R, and DVD+RW).

Chapter 5 Operation

5.1 FACTORY DEFAULT

MENU Setup>

QUICK SETUP>
- QUICK SETUP……..……OFF
- IMAGE SIZE……720x240
- RECORD FRAME……60
- EVENT……..……..……ALL
- PRE RECORD TIME…….……..5 sec
- POST RECORD TIME……..…..10 sec
- IMAGE QUALITY.. ……FINE
- AUDIO RECORD ……OFF
- REMOTE CONTROL ID…….……... ..ALL

SCREEN>
- POSITION
  - HORIZONTAL POSITION……0
  - VERTICAL POSITION……..0
- AUTO SEQUENCE
  - QUAD-A~E/ SIX/ SEVEN/ NINE-A~B/
  - TEN/ THIRTEEN/ SIXTEEN…….. ……..3SEC
  - ADD AUTO SINGLE…..……...OFF
  - AUTO-SINGLE CH1~16……..…3SEC
- DISPLAY
  - HDD FREE SPACE……..ON
  - HDD FREE SPACE MODE…..……PERCENT
  - RECORD STATUS..…..……...ON
  - CLOCK DISPLAY…….……ON
  - DATE & TIME MODE..……PERCENT
  - TITLE DISPLAY……ON
  - TITLE MODE…..……...TEXT
  - BORDER COLOR……WHITE
  - REMOTE CONTROL ID..……OFF
  - SPOT DISPLAY……ON
- TITLE
  - CH 1~CH 16……....CH 1~CH16
- MULTI SCREEN
  - LIVE 4E…… 2/ 4/ 6/ 8
  - LIVE 7……1/ 2/ 3/ 4/ 5/ 6/ 7
  - LIVE 9B…… 10/11/12/13/14/15/16/1/2
  - LIVE 10……1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10
  - LIVE 13……1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10/ 11/ 12/ 13
- COVERT
  - CH 1~16……....OFF
  - SELECT……..…..LV&PB&NW
- SPOT
  - SPOT MODE……..MANUAL
  - SPOT SEQ. TIME…..……...3SEC

ADD SPOT MULTI……....OFF

RECORD>

RECORD SETUP
RECORD PROGRAM..…….…….....6
RECORD PROGRAM (Refer to page 52)
IMAGE QUALITY
RECORD QUALITY…….…….....FINE
AUDIO RECORD
AUDIO 1……..…….... OFF
AUDIO 2……..…….... OFF
AUDIO 3……..…….... OFF
AUDIO 4……..…….... OFF

REPEAT RECORD
REPEAT RECORD..……..ON
REPEAT RECORD ALARM…….…..5%
PLAY MODE…….…….....FRAME
BACKUP MODE..…….....OFF
HOLIDAY
HOLIDAY RECORD…….…OFF
HOLIDAY SETUP(MM/DD) ……..00/00

EVENT>

MOTION DETECTION
CHANNEL……..1
SENSITIVITY…….5
AREA SETUP
TEST MOTION
EVENT SCREEN MODE……..…SCREEN HOLD
EVENT CHECK.……OFF
EVENT MESSAGE..……....OFF
EVENT MESSAGE RESET……..…..5SEC
EVENT BUZZER..……..OFF
SENSOR INPUT
SENSOR 01~16 INPUT TYPE..……..NOT USED
RELAY OUTPUT
CH 1~16: ALARM/ V-LOSS/ MOTION..……1/ 2/ 3
RELAY 1~3 OUTPUT TIME..……1SEC
RELAY 4 SELECT…..……POWER

SYSTEM>

HDD
HDD CONFIGURATION
REMOVABLE/ FIXED-01~04……..…….…NO HDD
REC HDD INITIALIZE
BACKUP HDD INITIALIZE

CLOCK
DATE & TIME
TIME ADJUST
INTERNET TIME ADJUST...……OFF
DAYLIGHT SAVING TIME..……..…..OFF
PASSWORD
MASTER PASSWORD…..…….……..11111111
SUPERVISOR PASSWORD.……..22222222
MENU DISPLAY CHECK.…….……OFF
POWER OFF CHECK...…….……OFF

REC/PLAY CHECK…..……..…OFF
VIDEO STANDARD…….……..AUTO
LANGUAGE……..……ENGLISH
REMOTE CONTROL ID…….……..…….ALL
KEY ECHO…..……..……ON
DVR INITIALIZE…….……..……..NO
FIRMWARE UPGRADE…….……NO

LINK>

NETWORK
DHCP……..……OFF
RS-232
BAUD RATE..……..115200
DATA BIT……..……8
PARITY BIT…..……..……NONE
STOP BIT……..……1
RS-422/485
SYSTEM ID……..……1
OUTPUT MODE..……RS-485
BAUD RATE..……..115200
DATA BIT……..……8
PARITY BIT…..……..……NONE
STOP BIT……..……1
PTZ
CH 1~16: MODEL/ ID…….……..... NONE/ 9600/ 1
E-mail

SEARCH>

CALENDAR SEARCH
HDD ID……..NORMAL
CHANNEL……..……ALL
SEARCH & COPY
HDD ID……..NORMAL
CHANNEL……..……ALL
TIME SEARCH
HDD ID……..NORMAL
CHANNEL……..……ALL
EVENT SEARCH
HDD ID……..NORMAL
CHANNEL……..……..ALL
EVENT……..……ALL
BLOCK SEARCH
HDD ID……..NORMAL
FILE SEARCH
MEDIA……...USB_FRONT
BOOKMARK SEARCH
LOG FILE SEARCH

COPY>

COPY
COPY STATUS
COPY START/ END/ CUR TIME..……2000/00/00 00:00:00
MEDIA FORMAT
FORMAT MEDIA..……..USB_FRONT

EXIT> ……....SAVE ONLY
……....SAVE AND EXIT
……....EXIT WITHOUT SAVE

5.2 FRONT PANEL CONTROLS

5.2.1 POWER ON/ OFF SWITCH(located in rear panel)

After the connection of power cord and other devices(HDDS) with this DVR, turn the power on.

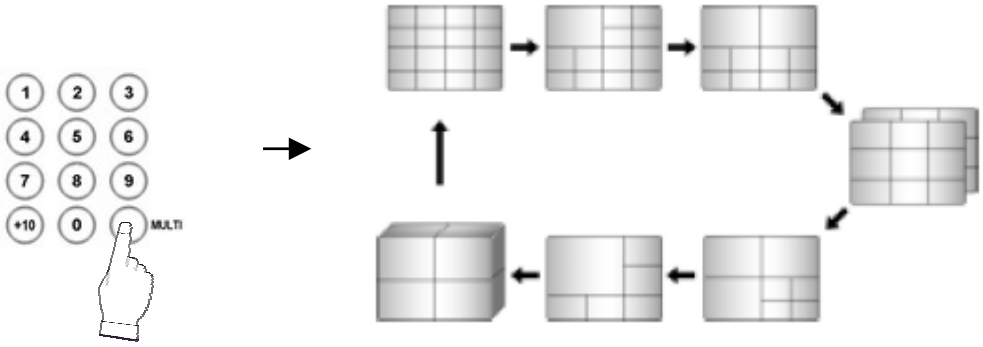
a. The video signal system (NTSC or PAL) is automatically detected.
b. Power Failure Recovery
This DVR automatically reverts back to programmed record parameters upon power restoration.
c. If the power key is protected by password, the power on/off cannot be executed before input the correct password. (Refer to the PASSWORD in the SYSTEM menu).

- If there is no video signal, the video signal system is set to NTSC. Do not input the PAL type video signal or it may cause the DVR's malfunction. In this case, turn off and on again.

5.2.2 SCREEN DISPLAY

5.2.2.1 Multi-Display & Full Screen display

a. Multi display



The example is display by 16CH DVR
To change a single camera display to the multi camera, press the MULTI button.

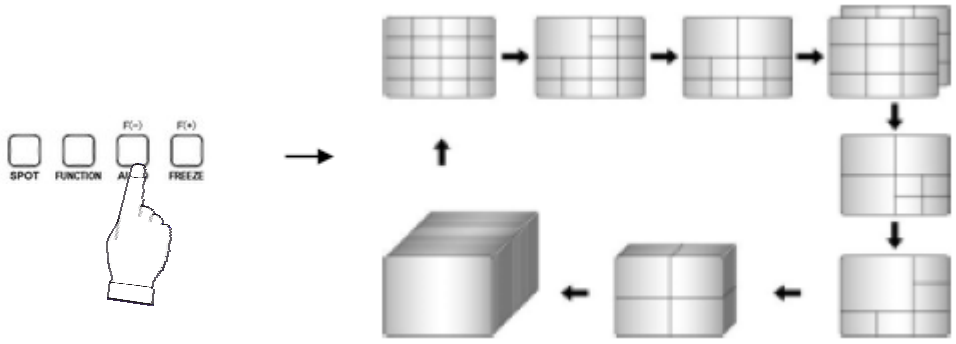
b. Full screen display

Press the desired camera number button to display on the monitor.

Use the **+10 Button** when you select two digit camera numbers.
EX) Camera Number 12 = Press the **+10 Button**, and then press the No. **2 Button**.

CAMERA/NUMBER INPUT buttons are used to input the password in the password lock function.

5.2.2.2 Auto Sequence Display

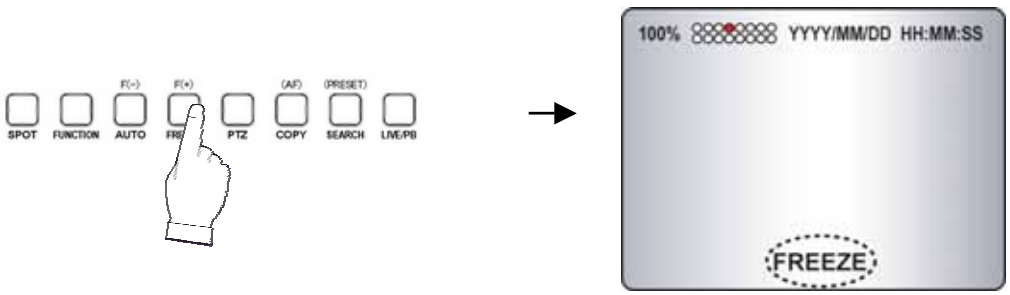


<ADD AUTO SINGLE : ON> example for 16CH

- Press the AUTO button, each screen display will be automatically switching according to the AUTO SEQUENCE setup.
- If you set up “ADD AUTO SINGLE : OFF” in the AUTO SEQUENCE setup menu, the single display will be skipped.
- To view the single display, set up “ADD AUTO SINGLE : ON” in the AUTO SEQUENCE setup menu and the single display will be included in the auto sequence display.
- Press the AUTO button again to exit the AUTO mode.

If an event takes place, the AUTO SEQUENCE mode will be cancelled.
Please refer to the AUTO SEQUENCE of Chapter 6 MENU setup for more information.(Page 40)

5.2.2.3 Freeze



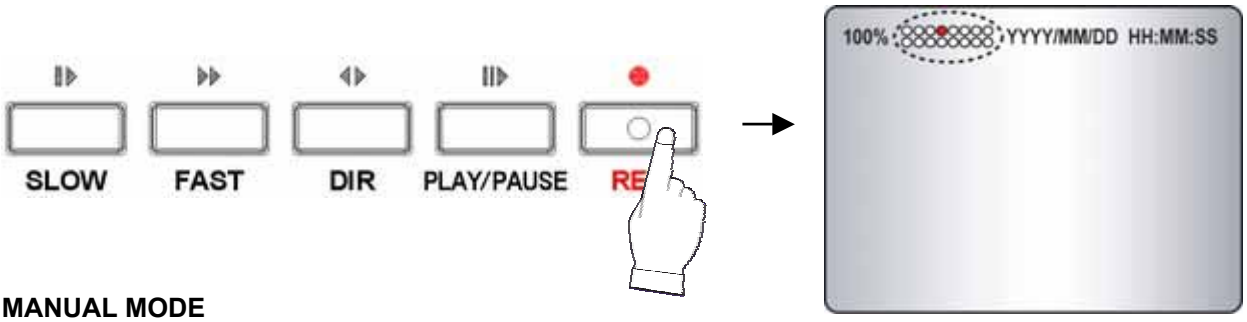
MULTI SCREEN MODE
At the Multi display mode, press the FREEZE button and then select the desired camera number.
Press the FREEZE button again to release the FREEZE mode.

SINGLE SCREEN MODE
Press the FREEZE button after the desired channel is selected.
Press the FREEZE button again to release the FREEZE mode.

- If you press the MULTI button after pressing the FREEZE button, all the channels will display still images.
- FREEZE function is not available, when auto mode is selected.
  (Refer to AUTO SEQUENCE in the SCREEN menu for further information)

5.2.3 RECORD

Press the REC button and the following message will be displayed as below;



MANUAL MODE
Press the REC button to begin recording.
To stop recording, press the REC button again. The screen will be turned into real time display mode.

SCHEDULE MODE
When Schedule mode is selected, the recording will be automatically executed according to the recording schedule. (Please refer to the RECORD PROGRAM in the RECORD setup, page 47.)

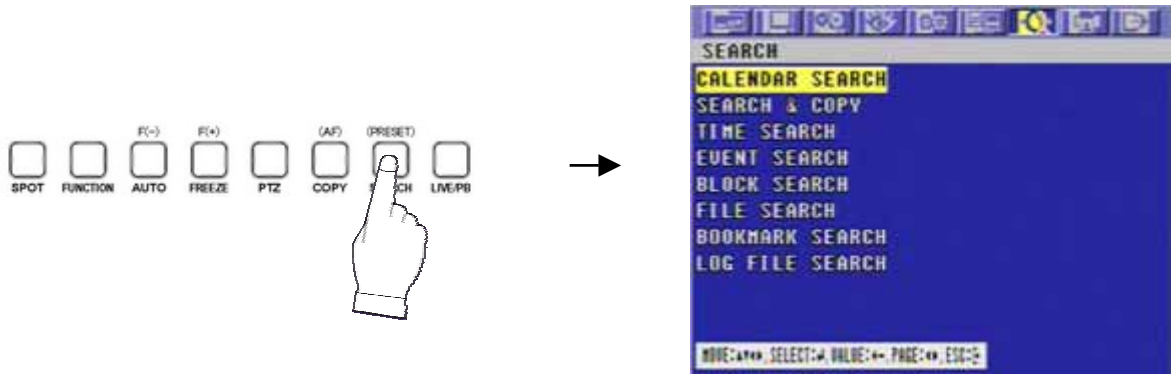
The color of record indication ( ) on the screen will be changed according to the type of recording and refer to the following.

- " **(Yellow)** " : Manual recording status.
- " **(Green)** " : Schedule recording status.
- " **(Red)** " : Event recording status. (Motion detection/ Video loss/ Sensor)
- " **(White)** " : Not recording.

All channels will be displayed by red lights even if an event happened just on one channel. Red light will be displayed because this unit enters the event record mode when event happened. If a channel has an event, all channels will be recorded by event recording frame rate to be set in RECORD PROGRAM menu.

5.2.4 SEARCH & PLAYBACK

Press the **SEARCH** button, the SEARCH menu screen appears.



If you press the PLAY button in the real time screen mode, playback will be executed from the end of the previous time search and press the desired channel select button.
To exit the playback mode and see the live screen again, press LV/PB button.

5.2.4.1 CALENDAR SEARCH

At the SEARCH menu;

① Move the cursor to **CALENDAR SEARCH** using ⬆ or ⬇ button.

② Press the ENTER button and CALENDAR SEARCH screen appears.

[CALENDAR SEARCH]
HDD ID : NORMAL
CHANNEL : ALL
5 MAY 2006
SUN MON TUE WED THU FRI SAT
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31

③ Select the desired HDD ID using the (-) or (+) button.

④ Move the cursor to CHANNEL using the ⬆ or ⬇ button and select the desired channel using the (-) or (+) button.

⑤ Move the cursor to the desired position using the ⬆ , ⬇ , ⬅ , ➡ buttons, and then select the desired date.

⑥ Press the ENTER button, and the following screen appears.

⑦ Move the cursor to the desired position of during HOUR, MIN and SEC using the ⬆ , ⬇ , ⬅ , ➡ buttons, and select the desired time using the (-), (+) buttons.

⑧ Press the ESC button to exit this menu.

5.2.4.2 SEARCH & COPY

At the SEARCH menu;

① Move the cursor to **SEARCH & COPY** using ⬆ or ⬇ button.

② Press the ENTER button and SEARCH & COPY screen appears.

③ Select the desired HDD ID using the (-) or (+) button.

④ Move the cursor to CHANNEL using the ⬆ or ⬇ button and select the desired channel using the (-) or (+) button.

⑤ Move the cursor to the desired position of SEARCH TIME using the ⬆ , ⬇ , ⬅ , ➡ buttons, and then set up the desired time using the(-), (+) buttons or turn the wheel scroll of mouse to set the search time.

⑥ Press the ENTER button and you can playback.

⑦ Move the cursor to START COPY and then press the ENTER button to copy.

⑧ Press the ESC button to exit this menu.

5.2.4.3 TIME SEARCH

At the SEARCH menu;

① Move the cursor to TIME SEARCH using ⬆ or ⬇ button.

② Press the ENTER button and TIME SEARCH screen appears.

③ Select the desired HDD ID using the (-) or (+) button.

④ Move the cursor to CHANNEL using the ⬆ or ⬇ button and select the desired channel using the (-) or (+) button.

⑤ Move the cursor to the desired position of SEARCH TIME using the ⬆ , ⬇ , ⬅ , ➡ buttons, and then set up the desired time using the(-), (+) buttons or turn the wheel scroll of mouse to set the search time.

⑥ Press the ENTER button and you can playback.

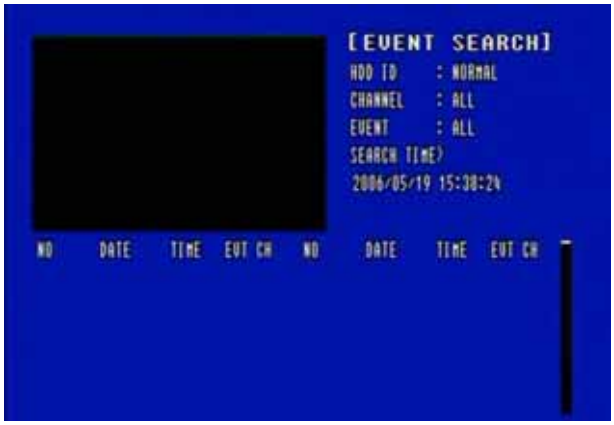
⑦ Press the ESC button to exit this menu.

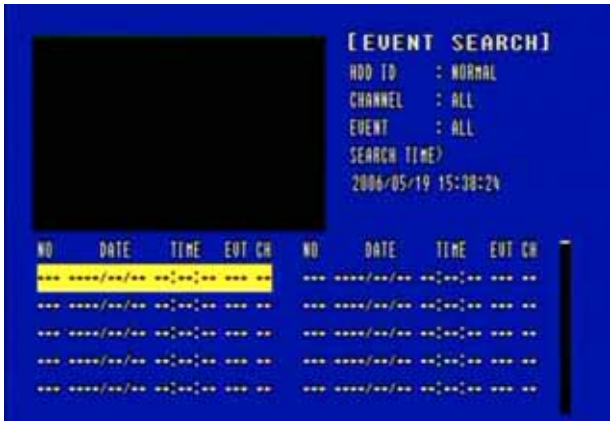
5.2.4.4 EVENT SEARCH

At the SEARCH menu;

① Move the cursor to EVENT SEARCH using ⬆ or ⬇ button.

② Press the ENTER button and the EVENT SEARCH menu screen appears.





③ Select the desired HDD ID using the (-) or (+) button.

④ Move the cursor to CHANNEL using the ⬆ or ⬇ button and select the desired channel using the (-) or (+) button.

⑤ Move the cursor to EVENT using the ⬆ or ⬇ button and select the event type to search using the (-) or (+) button.

⑥ Move the cursor to the desired position of SEARCH TIME using the ⬆ , ⬇ , ⬅ , ➡ buttons, and then set up the desired time using the(-), (+) buttons.
(Or turn the wheel scroll of mouse to search the event list.)

⑦ Press the ENTER button or turn the wheel scroll of mouse, and the event list searched appears.

⑧ When the event list appears on the screen, select the desired list using ⬆ or ⬇ buttons or wheel scroll of mouse and press the ENTER button for the playback.

- When video loss is detected, up to five seconds of **pre-recording** data is stored on the HDD and the details will be listed in the EVENT LIST. The beep sounds and the LED of the ALARM RESET button will flicker. Press the ALARM RESET button to remove this signal.
- When the unit receives a signal from the sensor input, DVR begins to record the input data according to the PRE/POST TIME in the RECORD setup and the details will be listed in the EVENT LIST.

CAUTION

ⓐ If the internal HDD(s) is initialized, all of the event images will be deleted.

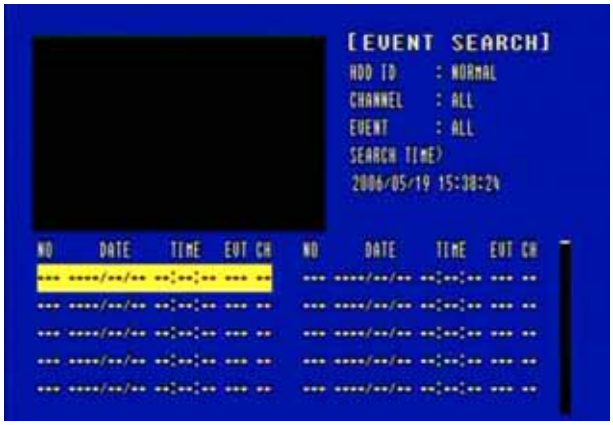
ⓑ When the unit is in normal recording status, the pre-recording will not be executed.

5.2.4.5 BLOCK SEARCH

At the SEARCH menu;

① Move the cursor to BLOCK SEARCH using ⬆ or ⬇ button.

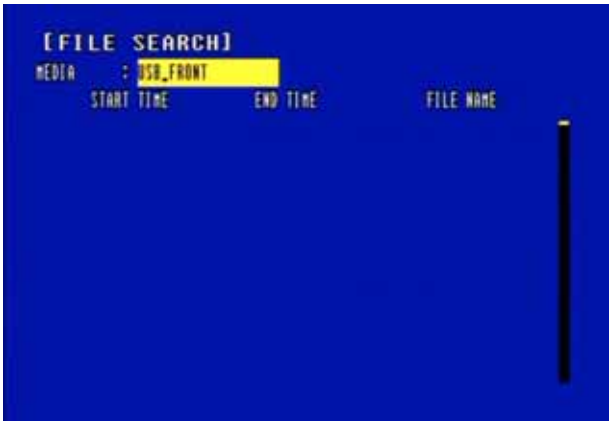
② Press the ENTER button and the BLOCK SEARCH menu screen appears.

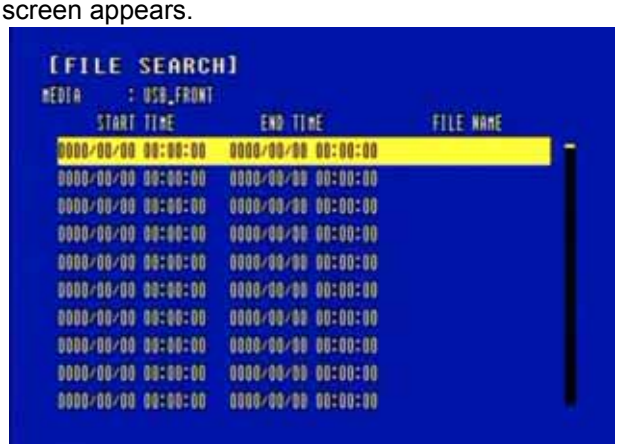


③ Select the desired HDD ID using the (-) or (+) button.
④ Move the cursor to the desired position of SEARCH TIME using the ⬆ , ⬇ , ⬅ , ➡ buttons, and then set up the desired time using the(-), (+) buttons. (Or turn the wheel scroll of mouse to search the block list.)
⑤ Press the ENTER or turn the wheel scroll of mouse, and the list searched appears.
⑥ When the list appears on the screen, select the desired list using ⬆ or ⬇ buttons or wheel scroll of mouse and press the ENTER button for the playback.

5.2.4.6 FILE SEARCH

At the SEARCH menu;
① Move the cursor to FILE SEARCH using ⬆ or ⬇ button.
② Press the ENTER button and the FILE SEARCH screen appears.

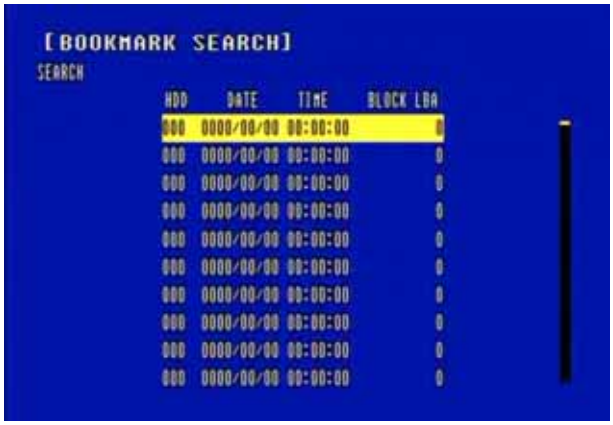




③ Select the desired type of MEDIA using the (-) or (+) button.
④ Press the ENTER button or turn the wheel scroll of mouse, and the list searched appears.
⑤ When the list appears on the screen, select the desired list using ⬆ or ⬇ buttons or wheel scroll of mouse.
⑥ Press the ENTER button for the playback.

5.2.4.7 BOOKMARK SEARCH

At the SEARCH menu;
① Move the cursor to BOOKMARK SEARCH using ⬆ or ⬇ button.
② Press the ENTER button and the BOOKMARK SEARCH screen appears.



③ Press the ENTER button, and the list searched appears.
④ When the list appears on the screen, select the desired list using ⬆ or ⬇ buttons or wheel scroll of mouse
⑤ Press the ENTER button for the playback.

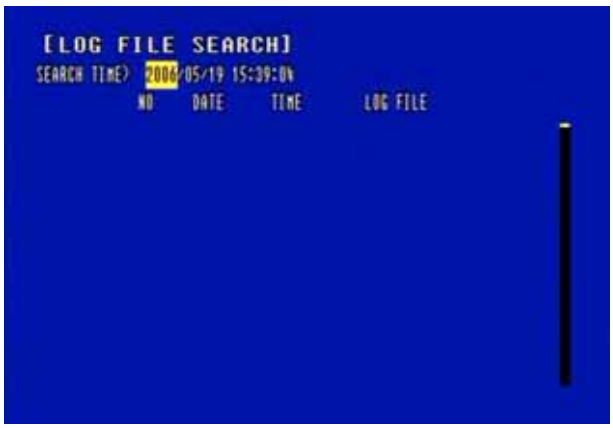
<How to make Bookmark list>

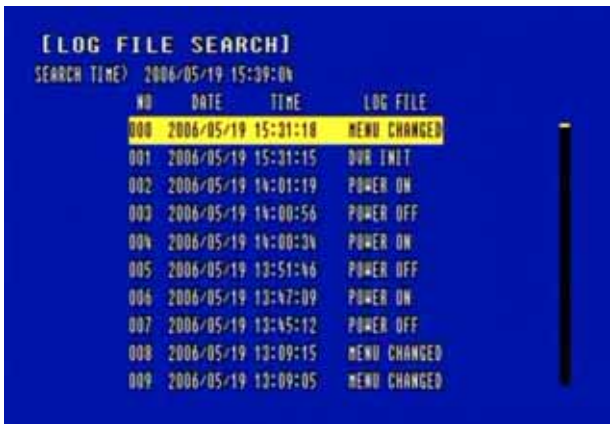
① Press the “PB/PAUSE” button to playback.
② Find the desired image using shuttle ring.
③ Press the “PB/PAUSE” button to see the still picture of the desired image.
④ Press the “PTZ” button to add the BOOKMARK list.

5.2.4.8 LOG FILE SEARCH

At the SEARCH menu;

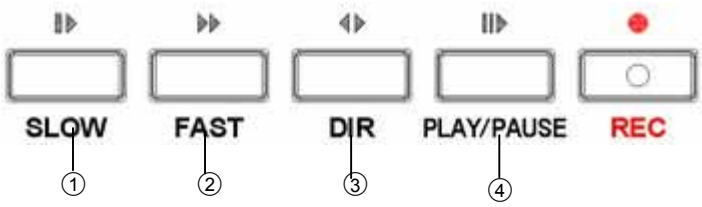
① Move the cursor to LOG FILE SEARCH using ⬆ or ⬇ button.
② Press the ENTER button and the LOG FILE SEARCH screen appears.





③ Move the cursor to the desired position of SEARCH TIME using the ⬆ , ⬇ , ⬅ , ➡ buttons, and then set up the desired time using the(-), (+) buttons.
(Or turn the wheel scroll of mouse to search the desired list.)
④ Press the ENTER button or turn the wheel scroll of mouse, and the list searched appears.
⑤ When the list appears on the screen, select the desired list using ⬆ or ⬇ buttons or the wheel scroll of mouse.

5.2.5 SEARCH BUTTON INFORMATION



5.1.5.1 SLOW (▮▶)

Press this button to make the speed level which is slower than normal speed (X1) and displayed it at the upper left side of screen as below;
(If you press this button again, the playback speed will be changed in the order of the below seven speed level)

i. ▮▶ 1/2 - 2 times slower than normal playback speed
ii. ▮▶ 1/4 - 4 times slower than normal playback speed
iii. ▮▶ 1/8 - 8 times slower than normal playback speed
iv. ▮▶ 1/16 - 16 times slower than normal playback speed
v. ▮▶ 1/32 - 32 times slower than normal playback speed
vi. ▮▶ 1/64 - 64 times slower than normal playback speed
vii. ▮▶ 1/128 - 128 times slower than normal playback speed

5.2.5.2 PLAY / PAUSE (▮▮▶)

Press this button to begin playback at normal speed (X1).
Press this button again to pause the playback.

> **NOTE**
> If you press the “PLAY/ PAUSE” button to playback, it will playback from the end of played final image.

<How to playback a section repeatedly>

① Press the “AUTO” button to set up the A position(starting position) and “(A-)” will be displayed on upper right of the screen.
② And then press the “FREEZE” button to set up the B position(ending position) and “(A-B)” will be displayed on upper right of the screen and played between A to B repeatedly.

<How to release the section repetition playback>

Press the “PIP(CLEAR)” button and section repetition playback will cancel.

5.2.5.3 FAST (▶▶)

Press this button to make faster the speed level which is higher than normal speed (X1) and displayed at the upper left side of screen as below:

i. ▶▶ 2 - 2 times faster than normal playback speed
ii. ▶▶ 4 - 4 times faster than normal playback speed
iii. ▶▶ 8 - 8 times faster than normal playback speed
iv. ▶▶ 16 - 16 times faster than normal playback speed
v. ▶▶ 32 - 32 times faster than normal playback speed
vi. ▶▶ 64 - 64 times faster than normal playback speed
vii. ▶▶ 128 - 128 times faster than normal playback speed

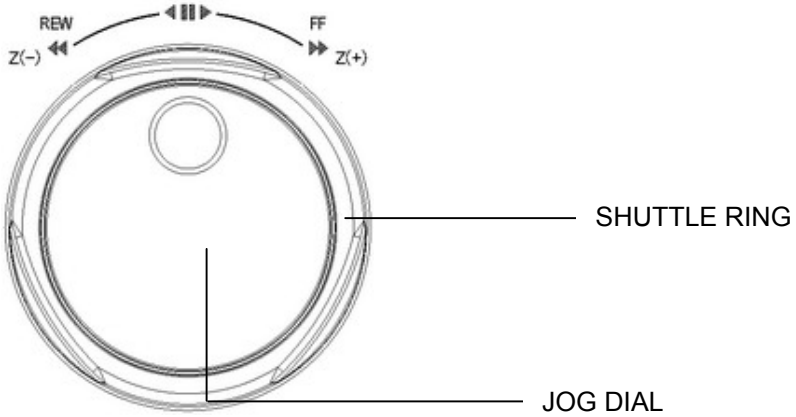
(However much data may be recorded can be searched in 3 seconds)

5.2.5.4 DIRECTION (◀▶)

Press this button to change direction to forward (▶) or backward (◀) in playback mode.

NOTE
Press DIR button to make a reversed playback from the end of recorded or played images during the real time display mode (Instant Playback).

5.2.6 JOG SHUTTLE INFORMATION



5.2.6.1 Normal Playback Mode

① Turn the SHUTTLE ring to the desired playback direction and speed level according to the above drawing during the playback.
② The DVR will go back to pause mode when the SHUTTLE ring is returned to the center position.

5.2.6.2 Frame by Frame Playback Mode

① Press the PB/PAUSE button to get a still image while the DVR is in the playback mode.
② Turn the JOG DIAL in either direction continuously for playback of consecutive frames.
③ Press the PB/ PAUSE button again to return to the previous mode.

5.2.6.3 Digital Zoom of PTZ camera

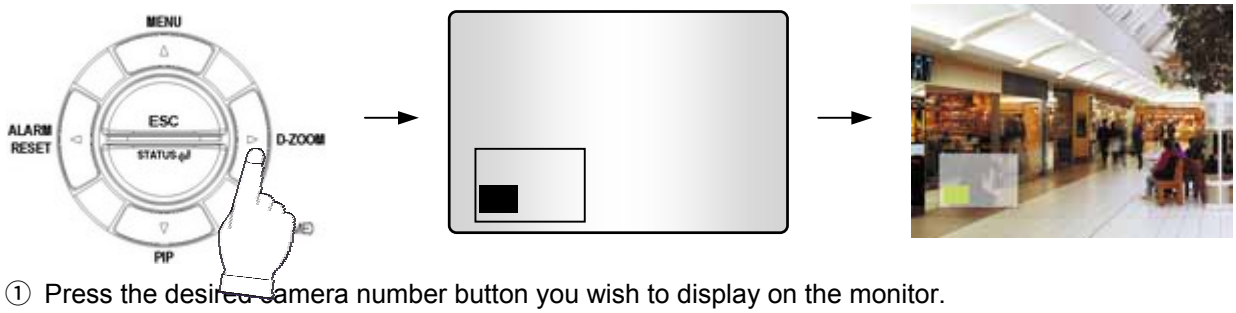
① Select a pre-set single camera, and then press the PTZ button.
② Turn the SHUTTLE RING to zoom in or out.
③ Turn the SHUTTLE RING to iris close/open of PTZ.

5.2.6.4 Using the JOG DIAL in the MENU setup

① Turn the JOG DIAL to modify the displayed setup value in MENU setup.
② Turn the shuttle ring to set up the “SCHEDULE” in RECORD SETUP of the MENU setup.

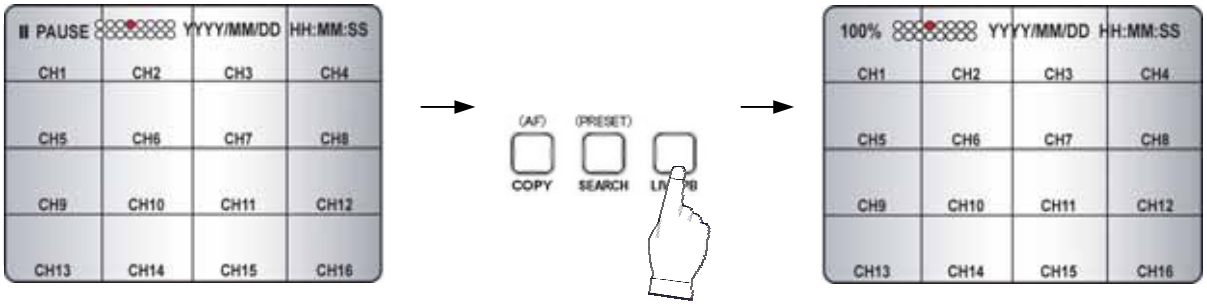
NOTE ➔Not All Functions can used by JOG DIAL
In the MENU setup, below buttons can be used instead of the JOG DIAL.
(+) (-) : Press this button to modify the setup value.

5.2.7 DIGITAL ZOOM



① Press the desired camera number button you wish to display on the monitor.
② Press the D-ZOOM button. The indication screen appears on the main screen.
③ Turn wheel scroll of mouse or press the ⬆ , ⬇ , ⬅ , ➡ buttons to select the desired location.
④ Press the ENTER button to change the zoom x2 ~ x4.
⑤ Press the ESC button to exit this screen.

5.2.8 SCREEN SELECT(LV/PB)



During the playback, press the **LV/PB** button to convert the screen into real time display mode.
(Press this button again to return to the playback mode.)

5.2.9 SPOT MONITOR

Set up the desired mode in “SPOT” of “SCREEN MENU” before executing the SPOT mode.

5.2.9.1 MANUAL MODE

① Press the “SPOT” button on the front panel to toggle “SPOT” mode indicated on the main monitor.
② Press a camera button to display that camera on the spot monitor.
③ OSD of the selected channel will be indicated at the upper left of screen in live mode.

5.2.9.2 EVENT MODE

Press the “SPOT” button and the Spot monitor will display the channel which an event happened.

NOTE: If you press the “SPOT” button after setting this mode, you can control the spot monitor manually.

5.2.9.3 SEQUENCE MODE

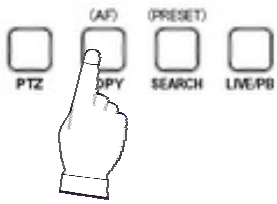
Press the “SPOT” button and each channel and split channel will be displayed on the Spot monitor in sequence.

NOTE: If you press the “SPOT” button after setting this mode, you can control the spot monitor manually.
4CH version don’t have this function.

** Please refer to 6.2.7 SPOT of SCREEN

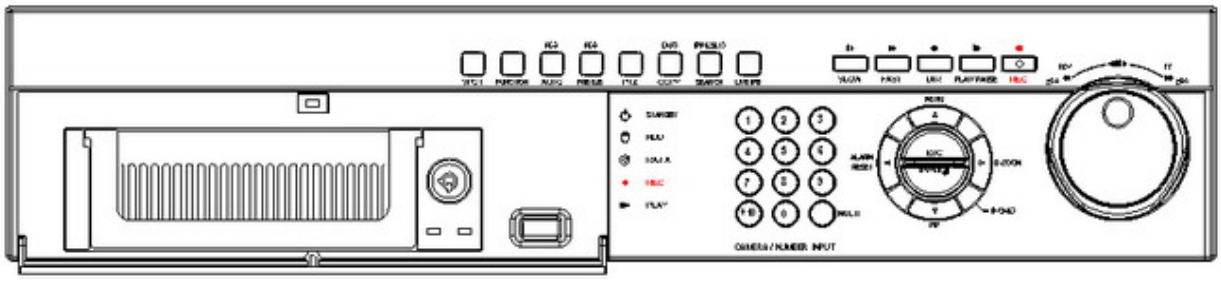
5.2.10 COPY

Press the COPY button to copy the recorded images into other media and the COPY MENU screen appears.



5.2.10.1 COPY

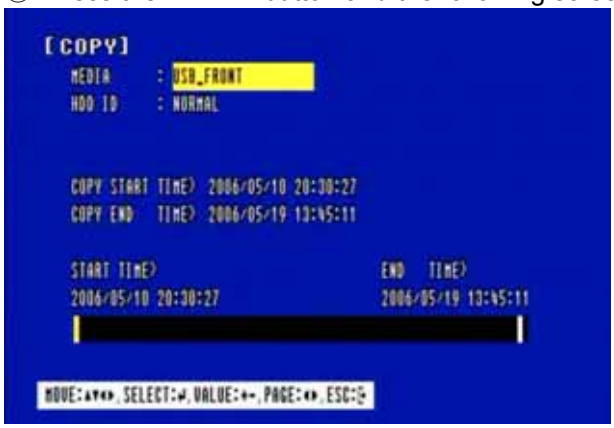
5.2.10.1-1 COPY TO **EXTERNAL HDD** (USB)



At the COPY menu,

① Move the cursor to COPY using the ⬆ or ⬇ buttons.

② Press the ENTER button and the following screen appears.

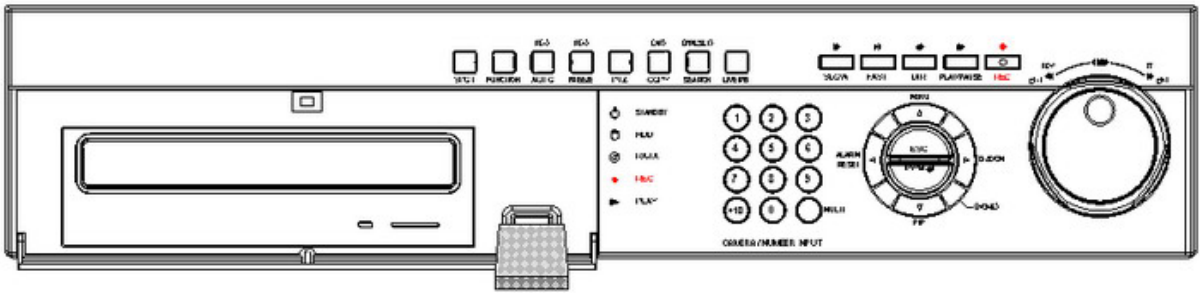


③ Select the desired MEDIA(USB port 3 select the correct USB position for HDD) (-), (+) buttons or wheel scroll of mouse.

④ Move the cursor to HDD ID using the ⬆ or ⬇ buttons and select the desired HDD to copy among HDD IDs using the (-), (+) buttons or wheel scroll of mouse.
⑤ Move the cursor to the desired position of COPY START TIME/ COPY END TIME using the ⬆ , ⬇ , ⬅ , ➡ buttons and press the (-) or (+) button to set up the time to set up the COPY START TIME and COPY END TIME.
** Scroll bar: - Turn the shuttle ring to the right to move the cursor of COPY END TIME or to the left to move the cursor of COPY START TIME and the cursor will be yellow. And then turn the wheel scroll of mouse to move the cursor to the desired time.
- It can operate with just Mouse click.
⑥ Press the ENTER button to copy.

NOTE
When the copy is in process, the copying status(ex. “COPY 30%”) will be displayed on the right side of the monitor. You can search and playback the copied images in HDD with DVR itself
(Please refer to 5.2.4.6 FILE SEARCH, page 23.)
**** You have to format in case of the media to be used in DVR for the first time.**

5.2.10.1-2 COPY TO USB memory stick



At the COPY menu,
① Move the cursor to COPY using the ⬆ or ⬇ buttons.
② Press the ENTER button and the following screen appears.

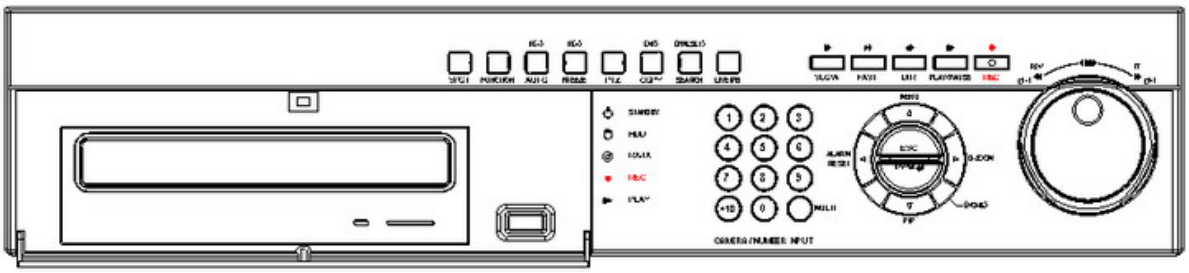
③ Select the desired MEDIA(select three of USB port) (-), (+) buttons or wheel scroll of mouse.
④ Move the cursor to HDD ID using the ⬆ or ⬇ buttons and select the desired HDD to copy among HDD IDs using the (-), (+) buttons or wheel scroll of mouse.
⑤ Move the cursor to the desired position of COPY START TIME/ COPY END TIME using the ⬆ , ⬇ , ⬅ , ➡ buttons and press the (-) or (+) button to set up the time or turn the wheel scroll of mouse to set up the COPY START TIME and COPY END TIME.

** Scroll bar: - Turn the shuttle ring to the right to move the cursor of COPY END TIME or to the left to move the cursor of COPY START TIME and the cursor will be yellow. And then turn the wheel scroll of mouse to move the cursor to the desired time.
- It can operate with just Mouse click.

⑥ Press the ENTER button to copy.

When the copy is in process, the copying status(ex. “COPY 30%”) will be displayed on the right side of the monitor.
You can search and playback the copied images in USB stick memory with DVR itself as well as PC.
(Please refer to 5.2.4.6 FILE SEARCH, page 23.)

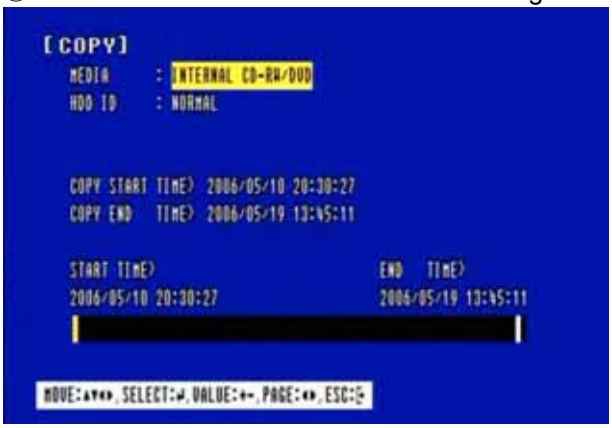
5.2.10.1-3 COPY TO CD-RW/ DVD-RW



At the COPY menu,

① Move the cursor to COPY using the ⬆ or ⬇ buttons.

② Press the ENTER button and the following screen appears.



③ Select the desired MEDIA(CD-RW/DVD) (-), (+) buttons or wheel scroll of mouse.

④ Move the cursor to HDD ID using the ⬆ or ⬇ buttons and select the desired HDD to copy among HDD IDs using the (-), (+) buttons or wheel scroll of mouse.

⑤ Move the cursor to the desired position of COPY START TIME/ COPY END TIME using the ⬆ , ⬇ , ⬅ , ➡ buttons and press the (-) or (+) button to set up the time or turn the wheel scroll of mouse to set up the COPY START TIME and COPY END TIME.

** Scroll bar: - Turn the shuttle ring to the right to move the cursor of COPY END TIME or to the left to move the cursor of COPY START TIME and the cursor will be yellow. And then turn the wheel scroll of mouse to move the cursor to the desired time.
- It can operate with just Mouse click.

⑥ Press the ENTER button to copy.

When the copy is in process, the copying status(ex. “COPY 30%”) will be displayed on the right side of the monitor.

NOTE

- CD-RW or DVD-RW is option and this DVR need the interface board to install a built-in CD-RW or DVD-RW.
- If you want a built-in CD-RW or DVD-RW, must purchase it from a authorized dealer.
- You can search and playback the copied images in CD or DVD with DVR itself as well as PC. (Please refer to 5.2.4.6 FILE SEARCH, page 23.)

**** You have to format in case of the media to be used in DVR for the first time.**

5.2.10.1-4 STOPPING COPY

Press the COPY button to stop copying and the following screen appears.

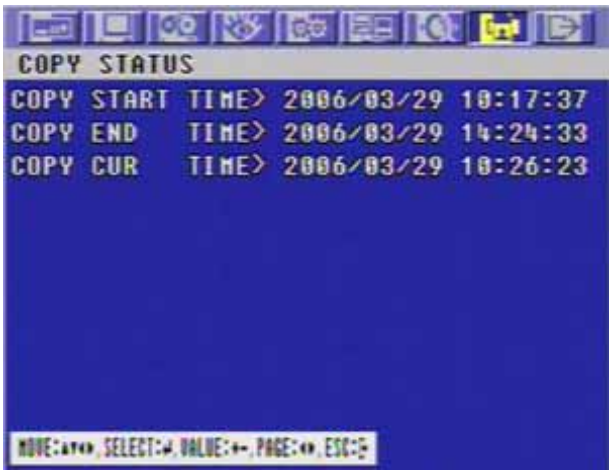
Move the cursor using the ⬆ or ⬇ buttons and select “YES” or “NO” and then press the ENTER button.

5.2.10.2 COPY STATUS

At the COPY menu,

① Move the cursor to COPY STATUS using the ⬆ or ⬇ buttons.

② Press the ENTER button to see the current copying status and the following screen appears.



③ Press the ESC button to exit this menu.

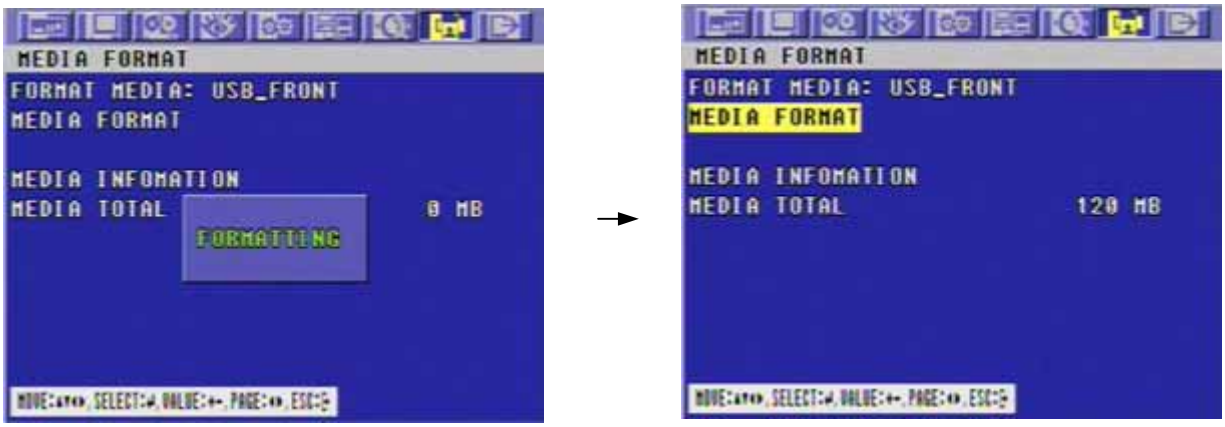
CUR TIME : Indicate current copying situation among the total copying data.

5.2.10.3 MEDIA FORMAT

At the COPY menu,

① Move the cursor to MEDIA FORMAT using the ⬆ or ⬇ buttons.

② Press the ENTER button and the following screen appears.



③ Select formatting media using the (-), (+) button.

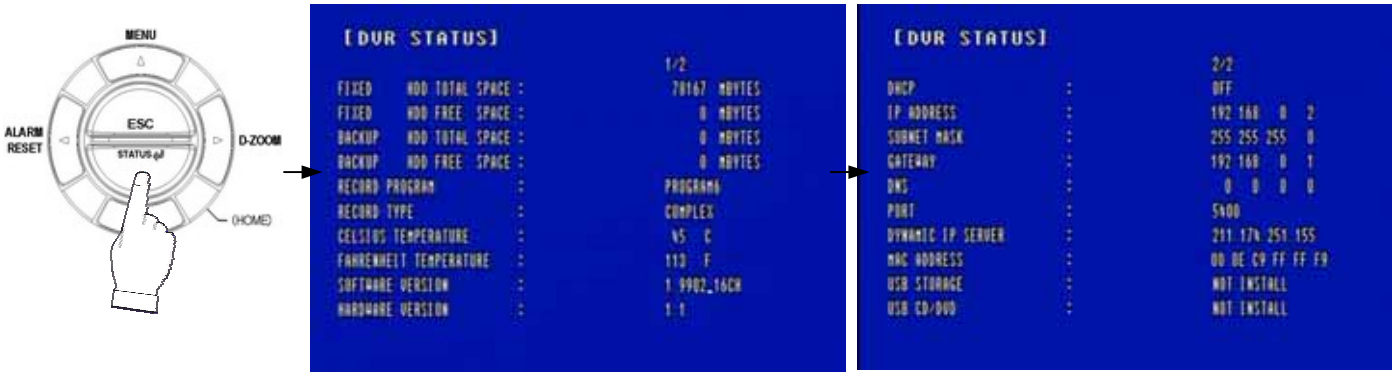
④ Move the cursor to MEDIA FORMAT and then press the “ENTER” button.

⑤ The message, “FORMATTING” will be displayed while formatting.

NOTE
If you don’t connect any media device, you can see the message, “Fail”.

5.2.11 DVR STATUS

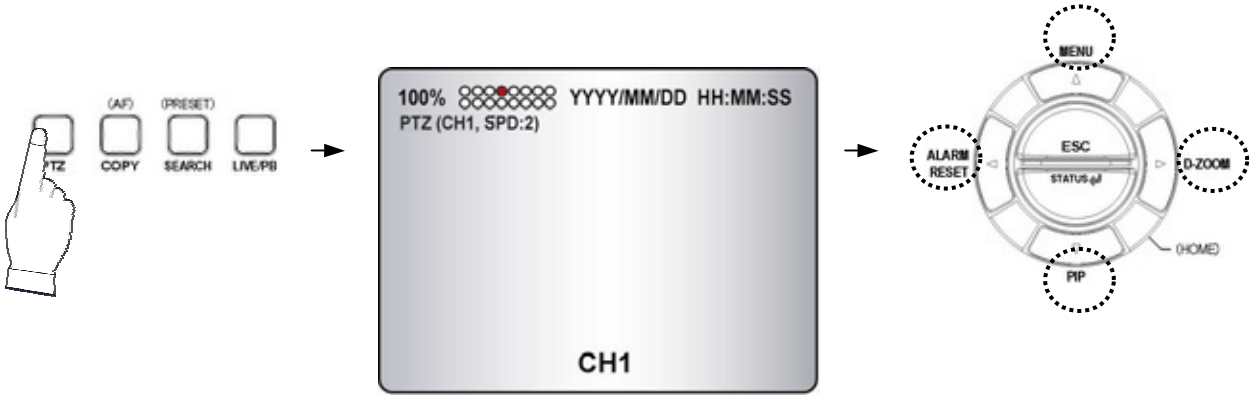
Press the “STATUS” button or double-click the left button of Mouse, The SYSTEM INFOMATION screen will appear. To see the next page, press the ⬅ , ➡ or use the wheel scroll of Mouse.
Press the STATUS button again to move on next information screen or press the “ESC” button to exit the menu.



5.2.12 PTZ CONTROL

5.2.12.1 PTZ control in live view

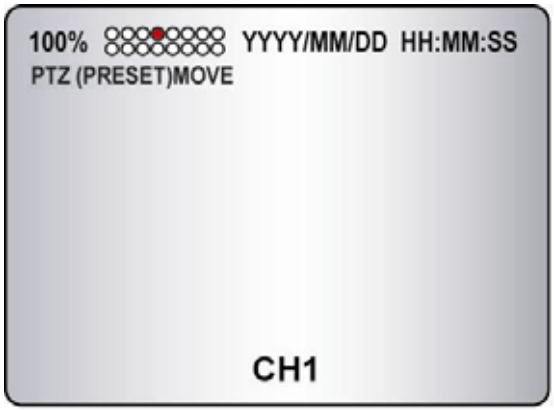
① Press the desired camera button to be displayed and the PTZ channel, model name and ID will be displayed on the left side of the monitor as the following picture.



② Press the “PTZ” button to control pan, tilt and zoom functions of PTZ camera.
③ Use the ⬅ , ➡ button to pan left and right and the ⬆ or ⬇ button to tilt up and down.
④ Turn the SHUTTLE ring to zoom in and out.
⑤ Use the (-) or (+) button to focus. Or press the (AF) button for auto focusing.
⑥ Press the PTZ button again to exit the PTZ mode.
** Please refer to 6.6.4 PTZ setup of LINK menu, page 74.

5.2.12.2 PTZ PRESETTING

① Press the “PTZ” button to enter PTZ mode.
② Press the “PRESET” button to enter PRESET mode and “PTZ(PRESET)MOVE”, OSD will be displayed on the left side of the monitor.



③ Move to the desired preset location using the “NUMBER” buttons.
④ Press the “PRESET” button again and “PTZ(PRESET)SET”, OSD will be displayed on the left side of the monitor.
⑤ Make the desired setting of the PTZ camera using the ⬆ , ⬇ , ⬅ , ➡, (-), (+) buttons.
⑥ Press the “NUMBER” button to set up the revised presetting.

PRESETS

- A preset is a user-defined camera position using pan and tilt, zoom, and focus commands.
  This DVR has the Programming capacity for 16 preset locations for 16CH.
  This DVR has the Programming capacity for 8 preset locations for 8CH.
  This DVR has the Programming capacity for 4 preset locations for 4CH.

- This DVR has RS-422/485 terminal block telemetry port on the rear panel.

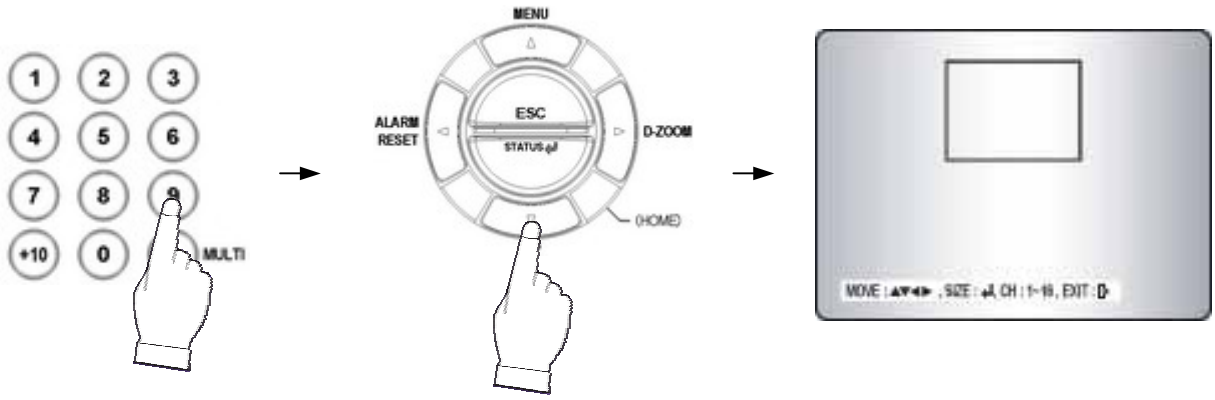
5.2.13 FUNCTION BUTTON

<Audio select >
You can select audio channels regardless of monitoring screen.
Press the “function(audio select)” button and then press the desired number button and you can hear audio of selected channel regardless of monitoring screen.
< Link of audio and camera >
Press the “function(audio select)” button and then press the “MULTI” button and you can hear audio of selected camera.
That is to say, you can hear CH 1 audio when viewing CH 1,
CH 2 audio when viewing CH 2,
CH 3 audio when viewing CH 3 and
CH 4 when viewing CH 4.

You need this button to control “USER” mode of RELAY 4 SELECT.
Please refer to 6.4.8 RELAY OUTPUT, page 56.

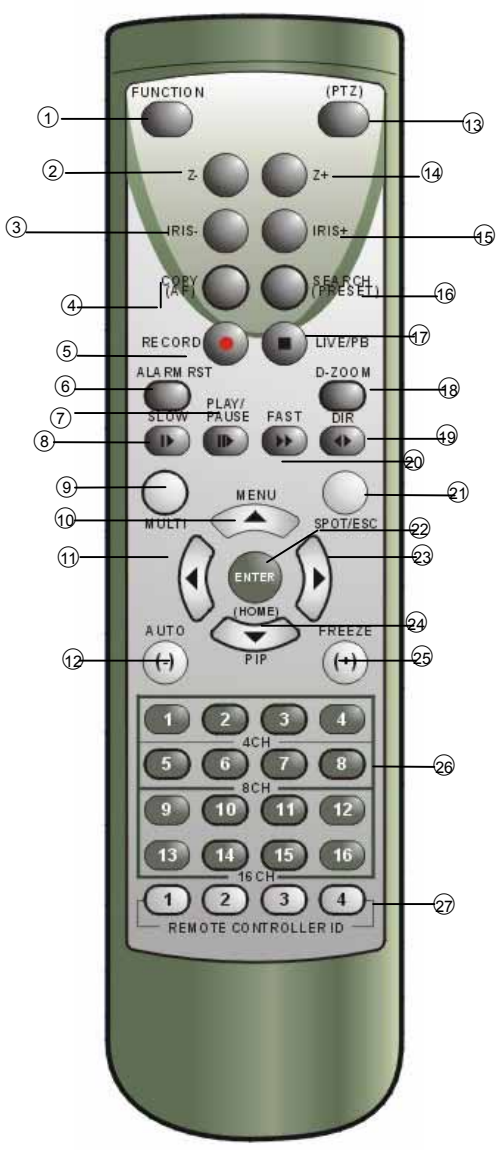
5.2.14 PIP CONTROL

① Select a single camera in live view, and then press the PIP button and the following screen will be displayed.



② Select the desired camera that will be displayed on the PIP screen.
③ Press the ENTER button to make the bigger PIP screen and use the ⬆ , ⬇ , ⬅ , ➡ buttons to move the position of PIP screen.
④ Press the ESC button to exit this mode.

5.3 REMOTE CONTROLLER



Button Name	Description
① FUNCTION	Refer to 5.2.13 FUNCTION BUTTON
② Z-	Zoom out of PTZ
③ IRIS -	Iris close of PTZ
④ COPY	Display the copy menu
⑤ RECORD (●)	Begin and stop recording
⑥ ALARM RESET	Release the event signal
⑦ PLAY / PAUSE(▮▮▶)	Press this button to begin playback. If press again during the playback, a still picture is displayed
⑧ SLOW (▮▶)	Press this button to slow-down playback speed
⑨ MULTI	Display multi-screen
⑩ (▲)/(MENU)	Move the cursor up to the next line in the setup menu Enter setup menu mode
⑪ (◀)	Move the cursor in left direction in the setup menu. Frame by Frame(field by field) playback
⑫ AUTO / (-) / F(-)	Auto sequence / Downward value / Focus control of PTZ
⑬ (PTZ)	Select the PTZ mode
⑭ Z+	Zoom in of PTZ
⑮ IRIS+	Iris open of PTZ
⑯ SEARCH	Display the search menu
⑰ LV/PB	Change screen mode
⑱ DIGITAL ZOOM	Control of zoom in and out
⑲ DIR (◀▶)	Change the direction of playback
⑳ FAST(▶▶)	Press this button to speed-up playback speed
㉑ SPOT / ESC	Enter the spot mode / Return to the previous mode
㉒ ENTER (↵)/(HOME)	Enter / Go home in PTZ mode
㉓ (▶)	Move the cursor in right direction in the setup menu. Frame by Frame(field by field) playback
㉔ (▼) / (PIP)	Move the cursor down to the next line / Enter PIP mode
㉕ FREEZE / (+) / F(+)	Freeze / Up-going value / Focus control of PTZ
㉖ CAMERA BUTTONS	Camera number select button
㉗ REMOTE CONTROLLER ID	Please refer to Remote controller ID in the system setup

5.4 MOUSE CONTROL

① Status display	Double-click of the left button
③ Menu display	One-click of the right button
③ Exit	Double-click of the right button
② Value change	Turning the wheel scroll
① Select	Double-click on the item or icon

* You can click the below keys on the MENU screen with a mouse.

Chapter 6 MENU Setup

ENTRANCE OF THE MENU SETUP

Press the MENU button for the desired DVR setting.

> You can use the mouse instead of buttons on the front panel of DVR.
> Simply click the desired icon or item in case of using the mouse.

6.1 QUICK SETUP

Press the MENU button and the QUICK SETUP menu appears as the following picture.
** This menu is simply used when user want to change just a few important settings.

Note: If you select QUICK SETUP setting is “ON”, the DVR System will according to this Setup Page setting to record the recording data, If you select QUICK SETUP setting is “OFF”, the DVR System will recording data according to the Record Setup Page setting.

Select the desired item using the ⬆ or ⬇ buttons and set up the value using the (-), (+) buttons or wheel scroll of mouse.

6.1.1 QUICK SETUP

Select “ON” or “OFF” using the (-), (+) buttons or wheel scroll of mouse to use the QUICK SETUP setting.

NOTE : If you select “ON”, RECORD MENU will be disregarded.

6.1.2 IMAGE SIZE

Select the desired IMAGE SIZE for recording using the (-), (+) buttons or wheel scroll of mouse.

6.1.3 RECORD FRAME

Select the desired frame rate for normal recording using the (-), (+) buttons or wheel scroll of mouse.
All event channels will be recorded by the setting RECORD FRAME/16.
For example, if you set RECORD FRAME to 120, 16 each channel will be recorded by 7 ips.
** Please refer to chapter 6.3 RECORD.

6.1.4 EVENT

Select a kind of EVENT using the (-), (+) buttons or wheel scroll of mouse.
If you want to select all kind of event, choose “ALL” and if you don’t want event recording, choose “OFF”. The default is “ALL”.
Note: Except for schedule recording, to trigger event recording QUICK SETUP option must be set to ON and the EVENT option must be setup.

6.1.5 PRE RECORD TIME

Select the desired time for pre-recording using the (-), (+) buttons or wheel scroll of mouse. When video loss, alarm or motion is detected, the DVR will store pre-recorded data during the selected time. The pre-recording time can be set from 0 second to 5 second and the default is “5”.

6.1.6 POST RECORD TIME

Select the desired time for post-recording using the (-), (+) buttons or wheel scroll of mouse. When video loss, alarm or motion is detected, the DVR will store post-recorded data during the selected period. The post-recording time can be set from 0 second to 60 second and the default is “10”.

NOTE: The pre- and post- recording is not valid in normal recording mode.

6.1.7 IMAGE QUALITY

Select the desired image quality using the (-), (+) buttons or wheel scroll of mouse. There are 3 kinds of image quality. **Please refer to chapter 6.3 RECORD.**

6.1.8 REMOTE CONTROL ID

At the SYSTEM menu,
① Move the cursor to the REMOTE CONTROL ID using the ⬆ or ⬇ buttons.
② Set the REMOTE CONTROL ID using the (-), (+) buttons or wheel scroll of mouse.

If you are operating more than one DVR in the same place and wish to use the remote controller, the remote controller ID setup is required. Otherwise, do not change the default set value and “ON” should be selected.

Creates the Remote controller ID
Select one of the numbers from 11~14、21~24、31~34、41~44, and then press the same number button on the supplied remote controller before the operation.

6.2 SCREEN

To set up the SCREEN menu,
① Move the cursor to the SCREEN icon using the ⬅ , ➡ buttons in the MENU screen.
② Press the ENTER button when the cursor is on the SCREEN icon and the following items appear.

6.2.1 POSITION

At the SCREEN menu,
① Press the ENTER button when the cursor is on the POSITION and the following items appear.

② Change the value of the HORIZONTAL POSITION using the (-), (+) buttons or wheel scroll of mouse to adjust the horizontal position of the screen.
* The value is from -4 to +4 and the default is “0”.
③ Change the value of the VERTICAL POSITION using the (-), (+) buttons or wheel scroll of mouse to adjust the vertical position of the screen.
* The value is from -4 to +4 and the default is “0”.
④ To exit this POSITION menu, press the ESC button.

6.2.2 AUTO SEQUENCE

At the SCREEN menu,
① Move the cursor to the AUTO SEQUENCE using ⬆ or ⬇ buttons.
② Press the ENTER button when the cursor is on the AUTO SEQUENCE and the following 4 pages screen appears.

③ Move the cursor to each single or split channel using the ⬅ , ➡ buttons.
④ When the desired channel is selected, change the value of AUTO SEQUENCE duration using the (-), (+) buttons or wheel scroll of mouse to set the length of time for switching each channel in sequence.
* The value is from 0SEC to 60SEC and the default is “3SEC”.(Not suggest to select 0SEC)
⑤ To exit this AUTO SEQUENCE menu, press the ESC button.

ADD AUTO SINGLE: If selected OFF, every single channel will be skipped in the AUTO SEQUENCE mode. The default is “OFF”.
Note: You can select 0 sec to Skip the auto-split type, but the quad-A the most basic split function, so quad-A the smallest split value is 1.

6.2.3 DISPLAY

At the SCREEN menu,
① Move the cursor to the DISPLAY using ⬆ or ⬇ buttons.
② Press the ENTER button when the cursor is on the DISPLAY and the following items appear.

③ To exit this DISPLAY menu, press the ESC button.

6.2.3.1 HDD FREE SPACE

At the DISPLAY menu,
① Move the cursor using the ⬆ or ⬇ buttons to select the HDD FREE SPACE.
② Use the (-), (+) buttons or wheel scroll of mouse to choose “ON” or “OFF”.
* The default is “ON”.

ON: Remaining capacity of the fixed(not backup) HDDs will be displayed on the screen.

6.2.3.2 HDD FREE SPACE MODE

At the DISPLAY menu,
① Move the cursor using the ⬆ or ⬇ buttons to select the HDD FREE SPACE MODE.
② Use the (-), (+) buttons or wheel scroll of mouse to choose “PERCENT” or “GIGABYTE”.
* The default is “PERCENT”.

PERCENT: Remaining capacity of the fixed HDDs will be displayed on the screen in percent.
GIGABYTE: Remaining capacity of the fixed HDDs will be displayed on the screen in gigabyte.

6.2.3.3 RECORD STATUS

At the DISPLAY menu,
① Move the cursor using the ⬆ or ⬇ buttons to select the RECORD STATUS.
② Use the (-), (+) buttons or wheel scroll of mouse to choose “ON” or “OFF”.
* The default is “ON”.

ON: Displaying the recording status of each channel on the screen.

6.2.3.4 CLOCK DISPLAY

At the DISPLAY menu,
① Move the cursor using the ⬆ or ⬇ buttons to select the CLOCK DISPLAY.
② Use the (-), (+) buttons or wheel scroll of mouse to choose “ON” or “OFF”.
- The default is “ON”.

ON: The date and time will be displayed on the screen.

6.2.3.5 DATE&TIME MODE

At the DISPLAY menu,

① Move the cursor using the ⬆ or ⬇ buttons to select the DATE&TIME MODE.

② Use the (-), (+) buttons or wheel scroll of mouse to choose “NUMBER” or “INITIAL”.

* The default is “NUMBER”.

NUMBER: All date and time will be displayed in numbers.
Ex. 2005/01/01 00:00:00
INITIAL : the month section will be displayed in character.
Ex. JAN. 01 2005 00:00:00

6.2.3.6 TITLE DISPLAY

① At the DISPLAY menu, move the cursor using the ⬆ or ⬇ buttons to select the TITLE DISPLAY.

② Use the (-), (+) buttons or wheel scroll of mouse to choose “ON” or “OFF”.

* The default is “ ON”.

ON: Each channel title will be displayed on the screen. (Please refer to 2-4, TITLE setup)

6.2.3.7 TITLE MODE

① At the DISPLAY menu, move the cursor using the ⬆ or ⬇ buttons to select the TITLE MODE.

② Use the (-), (+) buttons or wheel scroll of mouse to choose “TEXT” or “BITMAP”.

* The default is “ TEXT”.

A bitmap is a type of graphics file on a computer.

6.2.3.7 BORDER COLOR

At the DISPLAY menu,

① Move the cursor using the ⬆ or ⬇ buttons to select the BORDER COLOR.

② Use the (-), (+) buttons or wheel scroll of mouse to choose “WHITE” or “BLACK”.

***** The default is “WHITE”.

WHITE: The color of the border line will be displayed on the multi-channel screen in white.
BLACK: The color of the border line will be displayed on the multi-channel screen in black.

6.2.3.8 REMOTE CONTROL ID

At the DISPLAY menu,

① Move the cursor using the ⬆ or ⬇ buttons to select the REMOTE CONTROL ID.

② Use the (-), (+) buttons or wheel scroll of mouse to choose “ON” or “OFF”.

***** The default is “OFF”.

ON: The remote controller ID will be displayed on the screen.

6.2.3.9 SPOT TITLE DISPLAY

At the DISPLAY menu,

① Move the cursor using the ⬆ or ⬇ buttons to select the SPOT TITLE DISPLAY.

② Use the (-), (+) buttons or wheel scroll of mouse to choose “ON” or “OFF”.

***** The default is “OFF”.

ON: Each channel title will be displayed on the spot monitor screen.

6.2.4 TITLE

At the SCREEN menu,

① Move the cursor to the TITLE using ⬆ or ⬇ buttons.

② Press the ENTER button when the cursor is on the TITLE and the following 2 pages screen appears.

③ Use the ⬅ , ➡ buttons to see the next page.

④ Press the ENTER button after selecting desired channel using the ⬆ or ⬇ buttons and the following screen appears.

⑤ Select the character using the ⬆ , ⬇ , ⬅ , ➡ buttons and then press the ENTER button.

⑥ To exit this CHARACTER TABLE screen, press the ESC button.

CHANNEL TITLE MODE: There are “TEXT” and “BITMAP”.
TEXT: Using the CHARACTER TABLE
BITMAP: It is possible to download new characters using the software (DVR Viewer) if you want.

6.2.5 MULTI-SCREEN

You can select the desired channels and make a 4、7、9、10、13 split screen(for 16CH) using this menu.

At the SCREEN menu,

① Move the cursor to the MULTI SCREEN using ⬆ or ⬇ buttons.

② Select the character using the ⬆ , ⬇ , ⬅ , ➡ buttons and then press the ENTER button.

③ Press the ENTER button when the cursor is on the MULTI SCREEN and the following screen appears.

④ To exit this MULTI SCREEN menu, press the ESC button.

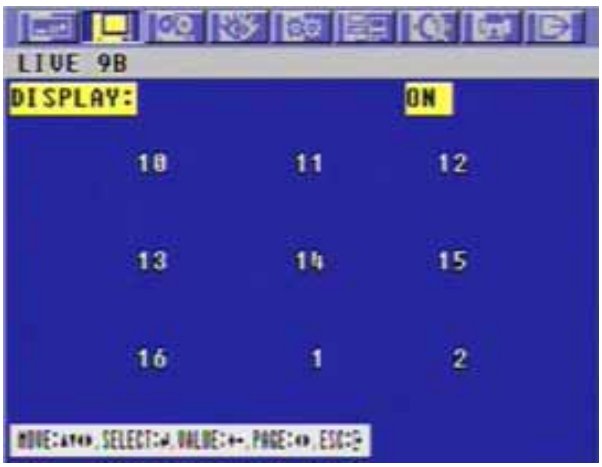
6.2.5.1 LIVE 4E / LIVE 7/ LIVE 9B/ LIVE 10/ LIVE 13

① Press the ENTER button after selecting “LIVE 4E、7、9B、10、13” using the ⬆ or ⬇ buttons.

[LIVE4E]

[LIVE 7]

[LIVE9B]



[LIVE 10]

[LIVE 13]

② Set the desired number of camera in each channel screen using the (-), (+) buttons or wheel scroll of mouse.
③ Use the ⬆ , ⬇ , ⬅ , ➡ buttons to set the other channel screen.
④ To exit this screen, press the ESC button.

Note:
In the each of LIVE SPLIT, same camera numbers should not be selected.
8CH have a 4、6、7 split screen using this menu.
4CH version don't have this option.

6.2.6 COVERT

At the SCREEN menu,
① Move the cursor to the COVERT using the ⬆ or ⬇ buttons.

② Press the ENTER button when the cursor is on the COVERT and the following 2 pages screen appears.
③ Move the cursor and select the desired item using the ⬆ or ⬇ buttons.
④ Use the (-), (+) buttons or wheel scroll of mouse to choose "ON" or "OFF".
⑤ Use the ⬅ , ➡ buttons to see the next page.

ON: Selected channel will be displayed in black screen (Hidden camera).
SELECT: It is possible to select among "LV&PB&NW", "PB&NW", "LV&NW", "LV&PB", "NETWORK", "PLAY" and "LIVE".
- LV(LIVE): To covert selected channels on live screen
- PB(PLAY): To covert selected channels on playback screen
- NW(NETWORK): To covert selected channels on network viewer screen

6.2.7 SPOT

At the SCREEN menu,
① Move the cursor to the SPOT using ⬆ or ⬇ buttons.
② Press the ENTER button when the cursor is on the SPOT and the following screen appears.

③ To exit this SPOT menu, press the ESC button.

6.2.7.1 SPOT MODE

① Use the (-), (+) buttons or wheel scroll of mouse to select the SPOT MODE.
- MANUAL: Manually select the channel of spot monitor.
- EVENT: Event channel will be displayed automatically on spot monitor.
- SEQUENCE: Every single channel will be switching and displaying in sequence.

Note: 4CH Version doesn't have this function(SEQUENCE).

6.2.7.2 SPOT SEQ. TIME

① Use the (-), (+) buttons or wheel scroll of mouse to set the SPOT SEQ. TIME.
The duration of spot sequence can be set from 1SEC to 60SEC.

Note: 4CH Version doesn't have this function.

6.2.7.3 ADD SPOT MULTI

① Use the (-), (+) buttons or wheel scroll of mouse to set the ADD SPOT MULTI.
You can see the multi-channel screen on spot monitor if you set "ON".

Note: 4CH Version doesn't have this function.

It is possible to support OSD and not to roll off because of digital spot.

6.3 RECORD

To set up the RECORD menu,
① Move the cursor to the RECORD icon using the ⬅ , ➡ in the MENU screen.
② Press the ENTER button when the cursor is on the RECORD icon and the following items appear.

-

6.3.1 RECORD SETUP

At the RECORD menu,

① Move the cursor to the RECORD SETUP using ⬆ or ⬇ buttons.

② Press the ENTER button when the cursor is on the RECORD SETUP and the following screen appears.

③ Move the cursor to choose the desired time using the ⬆ , ⬇ , ⬅ , ➡ buttons.

④ Select the desired program among PROGRAM 0~9 and POWER OFF using the (-), (+) buttons or wheel scroll of mouse.

⑤ Turn right the shuttle ring to set up the schedule of programmed time and the program number will be green. Turn the left the shuttle ring to release the schedule mode.
Or move the cursor to the desired position and then click the green square next to “SCHEDULE” using the Mouse.

⑥ Press the ESC button to exit this RECORD SETUP menu or press the ENTER button to enter the RECORD PROGRAM menu.

6.3.2 RECORD PROGRAM

At the RECORD menu,

① Move the cursor to the RECORD PROGRAM using ⬆ or ⬇ buttons.

② Press the ENTER button when the cursor is on the RECORD PROGRAM and the following screen appears.

RECORD PROGRAM> PROGRAM0
RECORD TYPE> COMPLEX
INTERVAL> 1 SEC
CH IMAGE SIZE NORMAL RECORD ONLY EVENT RECORD SINGLE COMPLEX QUALITY N/F PRE/POST TIME EVENT A/L/M
CH 1 720x240 0 0 F/F 5/10 - 0 -
CH 2 720x240 0 0 F/F 5/10 - 0 -
CH 3 720x240 0 0 F/F 5/10 - 0 -
CH 4 720x240 0 0 F/F 5/10 - 0 -
CH 5 720x240 0 0 F/F 5/10 - 0 -
CH 6 720x240 0 0 F/F 5/10 - 0 -
CH 7 720x240 0 0 F/F 5/10 - 0 -
CH 8 720x240 0 0 F/F 5/10 - 0 -
CH 9 720x240 0 0 F/F 5/10 - 0 -
CH 10 720x240 0 0 F/F 5/10 - 0 -
CH 11 720x240 0 0 F/F 5/10 - 0 -
CH 12 720x240 0 0 F/F 5/10 - 0 -
CH 13 720x240 0 0 F/F 5/10 - 0 -
CH 14 720x240 0 0 F/F 5/10 - 0 -
CH 15 720x240 0 0 F/F 5/10 - 0 -
CH 16 720x240 0 0 F/F 5/10 - 0 -
IMAGE TOTAL> 0 0 0 0 (D1:4, HALF D1:2, CIF:1)
MOVE:▲▼◀▶, SELECT:↵, VALUE:+-, PAGE:◀▶, ESC:⎋

③ Use the ⬆ , ⬇ , ⬅ , ➡ buttons to move the cursor to the desired item.
④ Select the desired RECORD TYPE using the (-), (+) buttons or wheel scroll of mouse.

- **SINGLE** : Only one event channel will be recorded by setting event recording frame rate and the other channels will be recorded by rest event recording fps/N(channel number) when an event happened. For example, if you connect 16 cameras and set EVENT RECORD of all channels to “30”, one event channel will be recorded by 30 ips and the other channel will be recorded by 90(Max. 120 – 30)/15 = 6 ips.
  You can set the more recording frame rate for one channel.
  (This type is good for the place where the event is rarely happened.)

- **COMPLEX** : All event channels will be recorded by max. event recording frame rate/N(channel number) when the event happened.
  For example, if you connect 16 cameras and set EVENT RECORD of all channels to Max. frame rate, 120, 16 each channel will be recorded by 120/N = 7 ips.
  (This type is good for the place where the event is often happened.)

< Result table of total frame rate >

Record Type	Image Size	Normal Record	Event Record		Unit
			Event Channel	Other Channel	
Single	360 x 240	Normal Frame	ES_Frame	RS_Frame	CIF/1 SEC
	720 x 240	Normal Frame	ES_Frame	RS_Frame	CIF/1 SEC
	720 x 480	Normal Frame	ES_Frame	RS_Frame	CIF/1 SEC
Complex	360 x 240	Normal Frame	EC_Frame	EC_Frame	CIF/1 SEC
	720 x 240	Normal Frame	EC_Frame	EC_Frame	CIF/1 SEC
	720 x 480	Normal Frame	EC_Frame	EC_Frame	CIF/1 SEC

- ES_Frame : Event single frame rate.
- EC_Frame : Event complex frame rate.
- RS_Frame : Remain single frame rate = (Max. Frame Rate – ES_Frame) / 15.

⑤ Select the desired RECORDING INTERVAL using the (-), (+) buttons or wheel scroll of mouse.
RECORDING INTERVAL means at what-second intervals you want to record.
If you set “RECORDING INTERVAL” to “1SEC”, each channel will be recorded by setting frame rate per “1SEC”.

⑥ Set the IMAGE SIZE of each channel using the (-), (+) buttons or wheel scroll of mouse. There are the 3 types of 720x480(D_1), 720x240(Half-D_1) and 360x240(CIF).
* The default is 720x240.

⑦ You can set the frame rate of each channel using the (-), (+) buttons or wheel scroll of mouse.
- **N** : Frame rate for normal recording
- **E** : Frame rate for event recording

⑧ Set the IMAGE QUALITY for normal recording and for event recording of each channel using the (-), (+) buttons or wheel scroll of mouse.
There are 3 types, Fine(F)/ Superfine(S)/ Low(L).

⑨ Set the PRE TIME and POST TIME using the (-), (+) buttons or wheel scroll of mouse. When the event is detected, the DVR will store pre- and post-recorded data during the selected period.

The value of “PRE TIME” is from 0 to5 seconds and the value of “POST TIME” is from 0 to 60 seconds.
The default of pre-recording time is 5 seconds and post-recording is 10 seconds.
Note: The pre- and post- recording is not valid in normal recording mode.

⑩ Choose the type of the EVENT using the (-), (+) buttons or wheel scroll of mouse and ⬆ , ⬇ , ⬅ , ➡ buttons if you want the event recording(Motion detection/ Video loss/ Alarm) or not. “O” means that the event recording is “ON” and “-“ means that the event recording is “OFF”.

< PROGRAM DEFAULT>
These are 10 kinds of program and you can change the program setting.

PROGRAM	0	1	2	3	4	5	6	7	8	9
RECORD TYPE	COMPLEX	SINGLE	SINGLE	COMPLEX	SINGLE	SINGLE	COMPLEX	SINGLE	SINGLE	COMPLEX
RECORDING INTERVAL	1	1	1	1	1	1	1	1	1	1
IMAGE SIZE	720x480 720x240 360x240	360x240	360x240	360x240	720x240	720x240	720x240	720x480	720x480	720x480
NORMAL	Max	4	7	7	2	3	3	1	1	1
EVENT SINGLE	0	15	30	0	15	30	0	15	30	0
EVENT COMPLEX	Max	0	0	7	0	0	3	0	0	1
QUALITY NORMAL	F	L	F	S	L	F	S	L	F	S
QUALITY EVENT	F	L	F	S	L	F	S	L	F	S
PRE-ALARM RECORDING	5	5	5	5	5	5	5	5	5	5
POST-ALARM RECORDING	10	10	10	10	10	10	10	10	10	10
EVENT ON/OFF	V-Loss ON	V-Loss ON	V-Loss ON	V-Loss ON	V-Loss ON	V-Loss ON	V-Loss ON	V-Loss ON	V-Loss ON	V-Loss ON

6.3.3 IMAGE QUALITY

At the RECORD menu,
① Move the cursor to the IMAGE QUALITY using ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the IMAGE QUALITY and the following screen appears.
NOTE: This function is only operative, when the recording condition is OFF.

③ Select the desired RECORD QUALITY using the (-), (+) buttons or wheel scroll of mouse.
④ And you can see the size of each image quality and how long you can record in the installed HDDs by the image quality.
⑤ To exit this IMAGE QUALITY menu, press the ESC button.

NOTE
RECORD TIME: A period how long you can record in free space of installed HDD(s) by setting of Max. frame rate.
TOTAL TIME: A period how long you can record in total installed HDD(s) by setting of Max. frame rate.
** The better the image quality is, the bigger the file size is and the worse the image quality, the smaller the file size is.

6.3.4 AUDIO RECORD

At the RECORD menu,
① Move the cursor to the AUDIO RECORD using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the AUDIO RECORD and the following screen appears.

③ Select the recording channel for each audio channel using the (-), (+) buttons or wheel scroll of mouse.

NOTE : 16CH、8CH、4CH DVR has 4CH Audio inputs.

6.3.5 REPEAT RECORD

At the RECORD menu,
① Move the cursor to the REPEAT RECORD using ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the REPEAT RECORD and the following screen appears.

③ Use the (-), (+) buttons or wheel scroll of mouse to set “ON” or “OFF”.
④ It is possible to set a point of time to work the REPEAT RECORD ALARM.
Move the cursor to ”REPEAT RECORD ALARM” using ⬆ , ⬇ buttons and then select the desired value using (-), (+) buttons or wheel scroll of mouse.
The value is from 5% to 10%.
⑤ To exit this REPEAT RECORD menu, press the ESC button.

ON: The recorded data will be overwritten when it is a point of time to work the REPEAT RECORD. REPEAT RECORD ALARM is the rest capacity of the HDD.

If you set “REPEAT RECORD ALARM” to 5%, alarm will work when the rest capacity of the HDD is 5%.

6.3.6 PLAY MODE

At the RECORD menu,
① Move the cursor to the PLAY MODE using ⬆ , ⬇ buttons.
② Select the PLAY MODE using the (-), (+) buttons or wheel scroll of mouse.

FRAME : It will playback images in frame mode which is useful for recorded images in high frame rate. This may occur moving artifact with recorded images in low frame rate.
FIELD : It will playback images in field mode. This reduces the resolution, but is suitable for recorded images in low frame rate.

6.3.7 BACKUP MODE

At the RECORD menu,
① Move the cursor to the “BACKUP MODE” using ⬆ , ⬇ buttons.
② Select the “BACKUP MODE” using the (-), (+) buttons or wheel scroll of mouse.

EVENT: Backup only when the event occurs.
MIRROR : Recording the same images in backup HDD.
OFF : Not backup.

6.3.8 HOLIDAY

At the RECORD menu,
① Move the cursor to the “HOLIDAY” using ⬆ , ⬇ buttons.
② Press the “ENTER” button to set up “HOLIDAY” and the HOLIDAY menu screen appears.

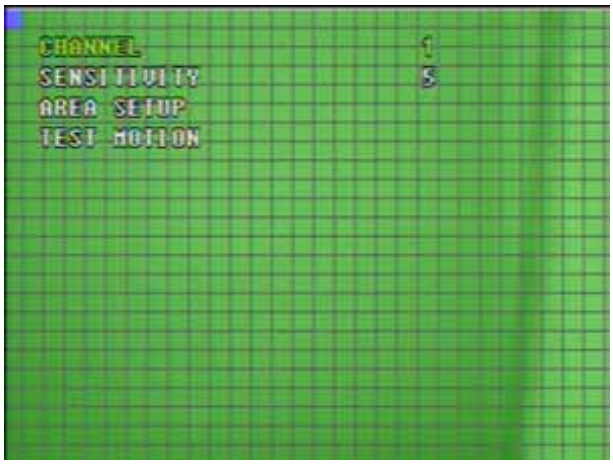
③ Set up “ON” or “OFF” of HOLIDAY RECORD using the (-), (+) buttons or wheel scroll of mouse.
④ Move the cursor using ⬆ , ⬇ buttons and set up the value using the (-), (+) buttons or wheel scroll of mouse.
⑤ To exit this HOLIDAY menu, press the ESC button.

6.4 EVENT

To set up the EVENT menu,
① Move the cursor to the EVENT icon using the ⬅ , ➡ in the MENU screen.
② Press the ENTER button when the cursor is on the EVENT icon and the following items appear.

6.4.1 MOTION DETECTION

At the EVENT menu,
① Move the cursor to the MOTION DETECTION using ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the MOTION DETECTION and the following screen appears.



6.4.1.1 CHANNEL

At the MOTION DETECTION menu,
① Move the cursor to CHANNEL using ⬆ , ⬇ buttons.
② Select the desired channel using the (-), (+) buttons or wheel scroll of mouse.
③ Under Event option, move the cursor to the EVENT MESSAGE using ⬆ , ⬇ buttons.
④ Select “ON” or “OFF” using the (-), (+) buttons or wheel scroll of mouse.

6.4.1.2 SENSITIVITY

At the MOTION DETECTION menu,
① Move the cursor to SENSITIVITY using ⬆ , ⬇ buttons.
② Select the sensitivity level using the (-), (+) buttons or wheel scroll of mouse.

SENSITIVITY: The higher the number is, the more sensitive. 1(lowest) ~ 5(highest)

6.4.1.3 AREA SETUP

At the MOTION DETECTION menu,
① Move the cursor to AREA SETUP using ⬆ , ⬇ buttons.
② Press the ENTER button to set the motion detection area.
③ Select the motion detection area using the ⬆ , ⬇ , ⬅ , ➡ buttons and then press the ENTER button to save the area.
④ Turn the shuttle ring to the right to select all cells for motion detection and turn the shuttle ring to the left to reset all area.
⑤ To exit this AREA SETUP, press the ESC button.

Mouse operation:
Enable Cell Setup by Mouse: Left button click (without releasing the button) and drag from the left top to the right bottom cell.
Disable Cell Setup by Mouse: Right button click (without releasing the button) and drag from the left top to the right bottom cell. AREA SETUP GRID: 30 x 24

6.4.1.4 TEST MOTION

At the MOTION DETECTION menu,
① Move the cursor to TEST MOTION using the ⬆ , ⬇ buttons.
② Press the ENTER button to test the motion detection.
③ To exit this TEST MOTION, press the ESC button.

6.4.2 EVENT SCREEN MODE

At the EVENT menu,
① Move the cursor to the EVENT SCREEN MODE using ⬆ , ⬇ buttons.
② Select the EVENT SCREEN MODE using the (-), (+) buttons or wheel scroll of mouse.

SCREEN HOLD: Keeping the current screen even if the event occurs.
EVENT FULL : Display the full screen of the channel which the event occurs.
EVENT MULTI : Display the multi-screen when the event occurs.

6.4.3 EVENT CHECK

At the EVENT menu,
① Move the cursor to the EVENT CHECK using ⬆ , ⬇ buttons.
② Select “ON” or “OFF” using the (-), (+) buttons or wheel scroll of mouse

6.4.4 EVENT MESSAGE

At the EVENT menu,
① Move the cursor to the EVENT MESSAGE using ⬆ , ⬇ buttons.
② Select “ON” or “OFF” using the (-), (+) buttons or wheel scroll of mouse

ON: The warning message will be displayed when the event occurs.

6.4.5 EVENT MESSAGE RESET

At the EVENT menu,
① Move the cursor to the EVENT MESSAGE RESET using ⬆ , ⬇ buttons.
② Set the time to reset the event message from 1SEC to 30SEC using the (-), (+) buttons or wheel scroll of mouse.

6.4.6 EVENT BUZZER

At the EVENT menu,
① Move the cursor to the EVENT BUZZER using ⬆ , ⬇ buttons.
② Select “ON’ or “OFF” using the (-), (+) buttons or wheel scroll of mouse to set the event buzzer.

6.4.7 SENSOR INPUT

At the EVENT menu,
① Move the cursor to the SENSOR INPUT using the ⬆ , ⬇ buttons.

SENSOR INPUT 1/2
SENSOR01 INPUT TYPE: NOT USED
SENSOR02 INPUT TYPE: NOT USED
SENSOR03 INPUT TYPE: NOT USED
SENSOR04 INPUT TYPE: NOT USED
SENSOR05 INPUT TYPE: NOT USED
SENSOR06 INPUT TYPE: NOT USED
SENSOR07 INPUT TYPE: NOT USED
SENSOR08 INPUT TYPE: NOT USED
SENSOR INPUT 2/2
SENSOR09 INPUT TYPE: NOT USED
SENSOR10 INPUT TYPE: NOT USED
SENSOR11 INPUT TYPE: NOT USED
SENSOR12 INPUT TYPE: NOT USED
SENSOR13 INPUT TYPE: NOT USED
SENSOR14 INPUT TYPE: NOT USED
SENSOR15 INPUT TYPE: NOT USED
SENSOR16 INPUT TYPE: NOT USED

② Press the ENTER button when the cursor is on the SENSOR INPUT and the following 2 pages screen appears.
③ Select the desired channel using the ⬆ , ⬇ buttons.
④ Select the type of sensor which is connected with DVR using the (-), (+) buttons or wheel scroll of mouse.
⑤ To exit this SENSOR INPUT menu, press the ESC button.

Select the right sensor type according to the type of installed sensor with the unit.
NORMAL OPEN : The sensor is open in normal times.
NORMAL CLOSE : The sensor is close in normal times.
NOT USED: No sensors are connected to the DVR unit

6.4.8 RELAY OUTPUT

At the EVENT menu,
① Move the cursor to the “RELAY OUTPUT” using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the “RELAY OUTPUT” and the following screen appears.

③ Move the cursor using the ⬆ , ⬇ , ⬅ , ➡ buttons and set up the value using the (-), (+) buttons or wheel scroll of mouse.
④ Press the ⬅ button to see the next page.
⑤ To exit this screen, press the “ESC” button.

NOTE
- It is possible to set the RELAY OUTPUT of each channel in the type of event.
- Relay output is from 1 to 4 and it is possible to set the period of the relay output.

<RELAY 4 SELECT>
There are POWER, USER, NOT USED and HDD ERROR.
- POWER: The relay is working when power is off.
- USER: User can operate the relay manually.
  Press the “FUNCTION” button to operate RELAY 4 manually.
  NC→NO: And then press the (+) button.
  NO→NC: And then press the (-) button.
  Press the “FUNCTION” button again if you want to exit this mode.

Please refer to 7.3 Relay Out .

6.5 SYSTEM

To set up the SYSTEM menu,
① Move the cursor to the SYSTEM icon using the ⬅ , ➡ in the MENU screen.
② Press the ENTER button when the cursor is on the SYSTEM icon and the following items appear.

6.5.1 HDD

At the SYSTEM menu,
① Move the cursor to the HDD using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the HDD and the following screen appears.

③ To exit this HDD menu, press the ESC button.

6.5.1.1 HDD CONFIGURATION

At the HDD menu,
① Move the cursor to HDD CONFIGURATION using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the HDD CONFIGURATION and the following screen appears.

③ Use the ⬆ , ⬇ , ⬅ , ➡ buttons to move the cursor and use the (-), (+) buttons or wheel scroll of mouse to change the value.

HDD MODE
- REC: Normal and Event recording
- BACKUP: Only for backup

6.5.1.2 REC HDD INITIALIZE

At the HDD menu,

① Move the cursor to REC HDD INITIALIZE using the ⬆ , ⬇ buttons.

② Press the ENTER button when the cursor is on the REC HDD INITIALIZE and the following screen appears.

③ If you want to initialize, move the cursor to “YES” and then press the “ENTER” button. If not, move the cursor to “NO” and then press the “ENTER” button.

④ To exit this screen, press the ESC button.

⑤ To exit this HDD menu, press the “ESC” button again.

6.5.1.3 BACKUP HDD INITIALIZE

At the HDD menu,

① Move the cursor to “BACKUP HDD INITIALIZE” using the ⬆ , ⬇ buttons.

② Press the “ENTER” button when the cursor is on the “BACKUP HDD INITIALIZE” and the following screen appears.

③ If you want to initialize, move the cursor to “YES” and then press the ENTER button. If not, move the cursor to “NO” and then press the ENTER button.
④ To exit this screen, press the ESC button.
⑤ To exit this HDD menu, press the “ESC” button again.

6.5.2 CLOCK

At the SYSTEM menu,
① Move the cursor to the CLOCK using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the CLOCK and the following screen appears.

6.5.2.1 DATE&TIME

At the CLOCK menu,
① Move the cursor to the DATE&TIME using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the DATE&TIME and the following screen appears.

③ Use the ⬆ , ⬇ , ⬅ , ➡ buttons to move the cursor to the desired position of date or time.
④ Use the (-), (+) buttons or wheel scroll of mouse to modify the current date and time.
- DATE: YYYY/MM/DD YEAR/MONTH/DAY
- TIME : HH:MM:SS HOUR:MINUTE:SECOND

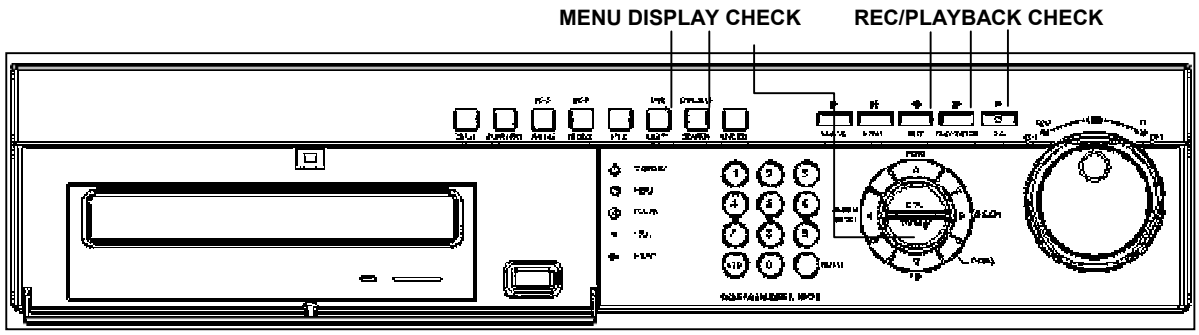
⑤ To exit this DATE & TIME screen, press the ESC button.

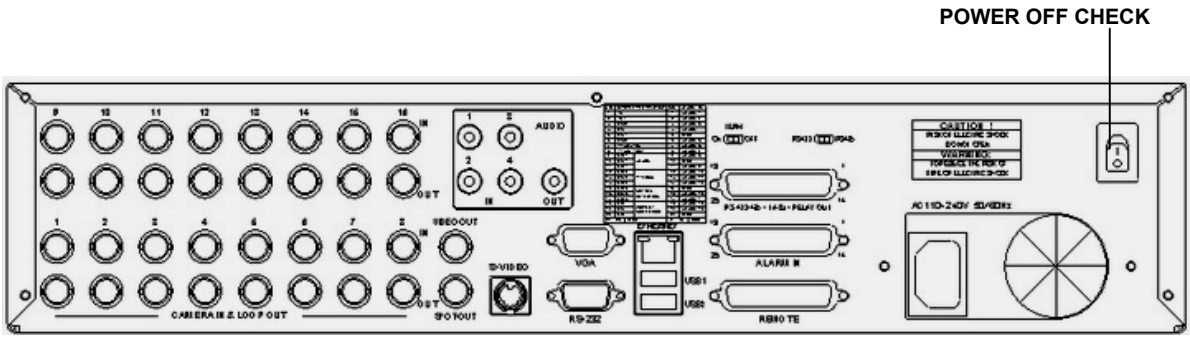
6.5.2.2 TIME ADJUST

At the CLOCK menu,
① Move the cursor to the TIME ADJUST using the , buttons.
② Press the ENTER button when the cursor is on the TIME ADJUST and the following screen appears.

③ Select “ON” or “OFF” using the (-), (+) buttons or wheel scroll of mouse when the cursor is on “INTERNET TIME ADJUST”. If the INTERNET TIME ADJUST is “ON”, the time of DVR will be adjusted to the time offered by the internet server.
④ Move the cursor using the ⬆ , ⬇ , ⬅ , ➡ buttons and then set the IP address of SELECT TIME SERVER using the (-), (+) buttons or wheel scroll of mouse.
⑤ Set the correct TIME ZONE standardizing GMT(Greenwich Mean Time).
⑥ Move the cursor to the DAYLIGHT SAVING TIME(Summer time) using the ⬆ , ⬇ buttons and then select “ON” or “OFF” using the (-), (+) buttons or wheel scroll of mouse.
⑦ If the DAYLIGHT SAVING TIME set “ON”, set up the starting date and time and end date and time. Use the ⬆ , ⬇ buttons to move the cursor and use the (-), (+) buttons or wheel scroll of mouse to change the value.
⑧ To exit this TIME ADJUST menu, press the ESC button.

6.5.3 PASSWORD





At the SYSTEM menu,

① Move the cursor to the PASSWORD using the ⬆ , ⬇ buttons.

② Press the ENTER button when the cursor is on the PASSWORD and the following screen appears.

③ To exit this PASSWORD menu, press the ESC button.

6.5.3.1 MASTER PASSWORD

At the PASSWORD menu,

① Move the cursor to the MASTER PASSWORD using the ⬆ , ⬇ buttons.

② Press the ENTER button when the cursor is on the MASTER PASSWORD and the following screen appears.

③ Insert the current password in the eight digits marked ******** beside OLD PASSWORD using the CAMERA/ NUMBER INPUT buttons.

④ And then insert 8 numbers of NEW PASSWORD using the CAMERA/ NUMBER INPUT buttons.

⑤ And you have to insert the same numbers again to verify the password after entering the NEW PASSWORD.
⑥ To exit this MASTER PASSWORD menu, press the ESC button.

6.5.3.2 SUPERVISOR PASSWORD

At the PASSWORD menu,
① Move the cursor to the SUPERVISOR PASSWORD using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the SUPERVISOR PASSWORD and the following screen appears.

③ Insert the current password in the eight digits marked ******** beside OLD PASSWORD using the CAMERA/ NUMBER INPUT buttons.
④ And then insert 8 numbers of NEW PASSWORD using the CAMERA/ NUMBER INPUT buttons.
⑤ And you have to insert the same numbers again to verify the password after entering the NEW PASSWORD.
⑥ To exit this SUPERVISOR PASSWORD menu, press the ESC button.

NOTE: Supervisor can't change or setup the MENU
You can use only 0~9 number buttons to setup the PASSWORD.
Master 's default password is 11111111, Supervisor 's default password is 22222222.

6.5.3.3 MENU DISPLAY CHECK

At the PASSWORD menu,
① Move the cursor to the MENU DISPLAY CHECK using the ⬆ , ⬇ buttons.
② Select "ON" or "OFF" to set up the MENU DISPLAY CHECK using the (-), (+) buttons or wheel scroll of mouse.

If MENU DISPLAY CHECK is "ON", the password (only Master password is applicable) will be required when you display or set the MENU. The default is "OFF".

6.5.3.4 POWER OFF CHECK

At the PASSWORD menu,
① Move the cursor to the POWER OFF CHECK using the ⬆ , ⬇ buttons.
② Select "ON" or "OFF" to set up the POWER OFF CHECK using the (-), (+) buttons or wheel scroll of mouse.

If POWER OFF CHECK is "ON", the password will be required when the system power is turned off.
The default is "OFF".

6.5.3.5 REC/PLAY CHECK

At the PASSWORD menu,

① Move the cursor to the REC/PLAY CHECK using the ⬆ , ⬇ buttons.

② Select “ON” or “OFF” to set up the REC/PLAY CHECK using the (-), (+) buttons or wheel scroll of mouse.

If REC/PLAY CHECK is “ON”, the password will be required when you start/stop to record or playback.
The default is “OFF”.

6.5.4 VIDEO STANDARD

At the SYSTEM menu,

① Move the cursor to the VIDEO STANDARD using the ⬆ , ⬇ buttons.

② Select the desired value using the (-), (+) buttons or wheel scroll of mouse.

If you select “AUTO”, this DVR can detect NTSC/PAL automatically.
The default is “AUTO”.

6.5.5 LANGUAGE

At the SYSTEM menu,

① Move the cursor to the LANGUAGE using the ⬆ , ⬇ buttons.

Note: System has only English for user to select this time.

6.5.6 REMOTE CONTROL ID

At the SYSTEM menu,

① Move the cursor to the REMOTE CONTROL ID using the ⬆ , ⬇ buttons.

② Set the REMOTE CONTROL ID using the (-), (+) buttons or wheel scroll of mouse.

If you are operating more than one DVR in the same place and wish to use the remote controller, the remote controller ID setup is required. Otherwise, do not change the default set value and “ON” should be selected.

Creates the Remote controller ID
Select one of the numbers from 11~14、21~24、31~34、41~44, and then press the same number button on the supplied remote controller before the operation.

6.5.7 KEY ECHO

At the SYSTEM menu,

① Move the cursor to the KEY ECHO using the ⬆ , ⬇ buttons.

② Set “ON” or “OFF” using the (-), (+) buttons or wheel scroll of mouse.

ON : The beep sounds when you press any buttons on the front panel.
OFF : The beep does not sound.

6.5.8 DVR INITIALIZE

At the SYSTEM menu,

① Move the cursor to the DVR INITIALIZE using the ⬆ , ⬇ buttons.

② Press the ENTER button when the cursor is on the DVR INITIALIZE and the following screen appears.

③ If you want to initialize, move the cursor to “YES” and then press the ENTER button. If not, move the cursor to “NO” and then press the ENTER button. Use the ⬆ , ⬇ buttons to move the cursor.

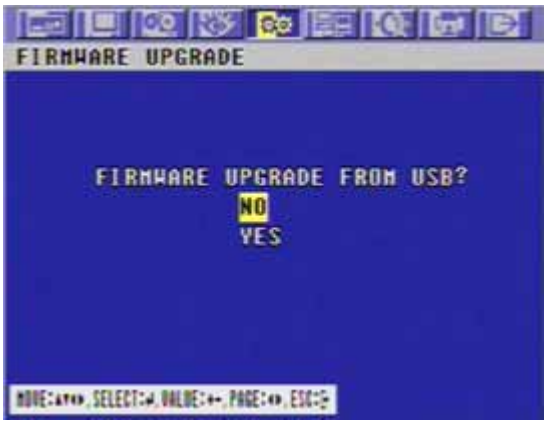
④ To exit this DVR INITIALIZE screen, press the ESC button.

6.5.9 FIRMWARE UPGRADE

At the SYSTEM menu,

① Move the cursor to the FIRMWARE UPGRADE using the ⬆ , ⬇ buttons.

② Press the ENTER button when the cursor is on the FIRMWARE UPGRADE and the following screen appears.



③ If you want to update firmware using the USB_FRONT port, move the cursor to “YES” and then press the ENTER button. If not, move the cursor to “NO” and then press the ENTER button. Use the ⬆ , ⬇ buttons to move the cursor.

④ To exit this FIRMWARE UPGRADE screen, press the ESC button.

NOTE: It is possible to upload the menu setting only with a front USB port.

6.6 LINK

To set up the LINK menu,
① Move the cursor to the LINK icon using the ⬅ , ➡ in the MENU screen.
② Press the ENTER button when the cursor is on the LINK icon and the following items appear.

6.6.1 NETWORK

At the LINK menu,
① Move the cursor to the NETWORK using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the NETWORK and the following screen appears.

③ To exit this NETWORK menu, press the ESC button.

<Fixed IP>

6.6.1.1 DHCP

At the NETWORK menu,
① Move the cursor to the DHCP using the ⬆ , ⬇ buttons.
② Select “OFF” using the (-), (+) buttons or wheel scroll of mouse.

6.6.1.2 IP ADDRESS

At the NETWORK menu,

① Move the cursor to the IP ADDRESS using the ⬆ , ⬇ buttons.

② Select the desired position using the ⬅ , ➡ buttons and set the data value using the (-), (+) buttons or wheel scroll of mouse.

6.6.1.3 SUBNET MASK

At the NETWORK menu,

① Move the cursor to the SUBNET MASK using the ⬆ , ⬇ buttons.

② Select the desired position using the ⬅ , ➡ buttons and set the data value using the (-), (+) buttons or wheel scroll of mouse.

6.6.1.4 GATEWAY

At the NETWORK menu,

① Move the cursor to the GATEWAY using the ⬆ , ⬇ buttons.

② Select the desired position using the ⬅ , ➡ buttons and set the data value using the (-), (+) buttons or wheel scroll of mouse.

6.6.1.5 DNS

At the NETWORK menu,

① Move the cursor to the DNS using the ⬆ , ⬇ buttons.

② Select the desired position using the ⬅ , ➡ buttons and set the data value using the (-), (+) buttons or wheel scroll of mouse.

6.6.1.6 PORT

At the NETWORK menu,

① Move the cursor to the PORT using the ⬆ , ⬇ buttons.

② Select the desired position using the ⬅ , ➡ buttons and set the data value using the (-), (+) buttons or wheel scroll of mouse.

NOTE: Port setting on DVR and client viewer software must be matched.

<Dynamic IP>

At the NETWORK menu,

① Move the cursor to the DHCP using the ⬆ , ⬇ buttons.

② Select “ON” using the (-), (+) buttons or wheel scroll of mouse.

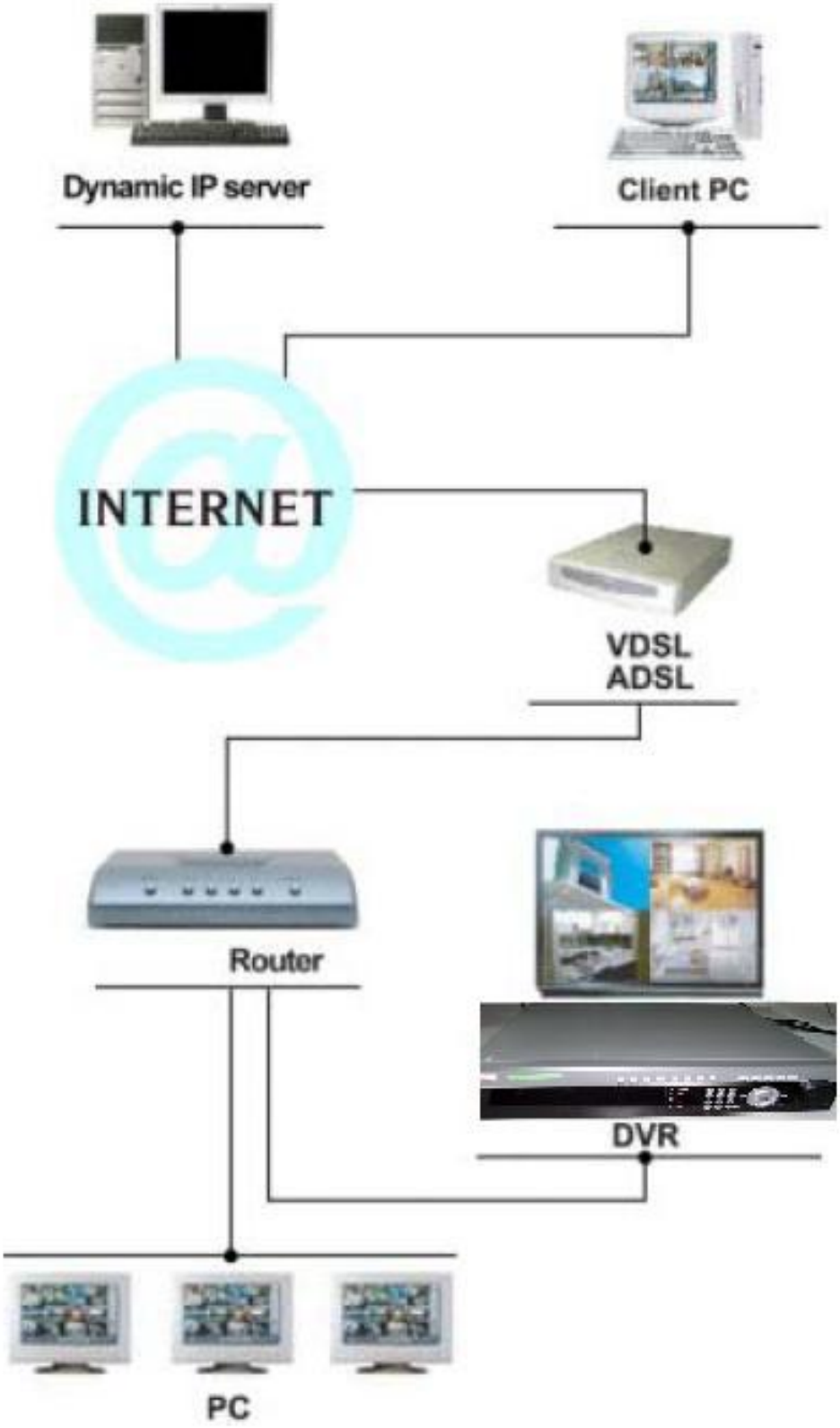
③ Move the cursor to the DYNAMIC SVR using the ⬆ , ⬇ buttons.

④ Input the dynamic server IP using the (-), (+) buttons or wheel scroll of mouse to change the value and
the ⬆ , ⬇ buttons to move the cursor.

NOTE: DHCP is a protocol for assigning dynamic IP addresses to devices on a network.
** You have to connect with Router in case of using a network of PPPOE type because this unit doesn’t have a PPPOE protocol.

-

** Please refer to the below image in case of a PPPOE type



6.6.2 RS-232

At the LINK menu,
① Move the cursor to the RS-232 using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the RS-232 and the following screen appears.

③ Use the ⬆ , ⬇ buttons to choose the item and use the (-), (+) buttons or wheel scroll of mouse to set the data value.
④ To exit this RS-232 menu, press the ESC button.

6.6.3 RS-422/485

At the LINK menu,
① Move the cursor to the RS-422/485 using the ⬆ , ⬇ buttons.
② Press the ENTER button when the cursor is on the RS-422/485 and the following screen appears.

③ Use the ⬆ , ⬇ buttons to choose the item and use the (-), (+) buttons or wheel scroll of mouse to set the data value.
④ To exit this RS-422/485 menu, press the ESC button.

NOTE
BAUD RATE : Data transmission speed per second.
DATA BIT : Data transmission bit.
PARITY BIT : Data transmission error checking.
STOP BIT : Data transmission ending bit

 # CAUTION:
Turn off the power not to damage this unit when you connect RS-232 connector.

6.6.4 PTZ

At the LINK menu,

① Move the cursor to the PTZ using ⬆ , ⬇ buttons.

② Press the ENTER button when the cursor is on the PTZ and the following 2 pages screen appears.

PTZ 1/2
CHANNEL MODEL SPEED ID
CH 1 PELCO D-TYPE 9600 1
CH 2 NONE 9600 1
CH 3 NONE 9600 1
CH 4 NONE 9600 1
CH 5 NONE 9600 1
CH 6 NONE 9600 1
CH 7 NONE 9600 1
CH 8 NONE 9600 1

PTZ 2/2
CHANNEL MODEL SPEED ID
CH 9 NONE 9600 1
CH 10 NONE 9600 1
CH 11 NONE 9600 1
CH 12 NONE 9600 1
CH 13 NONE 9600 1
CH 14 NONE 9600 1
CH 15 NONE 9600 1
CH 16 NONE 9600 1

③ Select the desired channel using ⬆ , ⬇ buttons.

④ Use the (-), (+) buttons or wheel scroll of mouse to select the right model of installed PTZ camera.

⑤ Press the ➡ button to set up a ID of the PTZ camera.

⑥ Use the (-), (+) buttons or wheel scroll of mouse to select the desired ID.

⑦ Press the ⬅ button to see the next page.

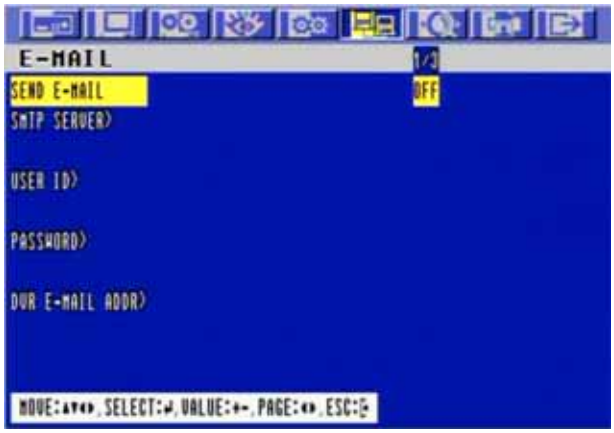
⑧ To exit this PTZ menu, press the ESC button.

6.6.5 E-mail

At the LINK menu,

① Move the cursor to the E-mail using ⬆ , ⬇ buttons.

② Press the ENTER button when the cursor is on the E-mail and the following pages screen appears.



6.6.5.1 SEND E-MAIL

At the E-MAIL menu,

Move the cursor to the SEND E-MAIL using the ⬆ , ⬇ buttons and select “ON” using the (-), (+) buttons to send a e-mail when an event happened.

6.6.5.2 SMTP SERVER

At the E-MAIL menu,

① Move the cursor to the SMTP SERVER using the ⬆ , ⬇ buttons to input the e-mail sever address to be used by DVR.

② Press the ENTER button and the following screen appears.

③ Select the character using the ⬆ , ⬇ , ⬅ , ➡ buttons and then press the ENTER button.

④ To exit this CHARACTER TABLE screen, press the ESC button.

6.6.5.3 USER ID

At the E-MAIL menu,

① Move the cursor to the USER ID using the , buttons to input the e-mail account to be used by DVR.

② Press the ENTER button and the following screen appears.

③ Select the character using the ⬆ , ⬇ , ⬅ , ➡ buttons and then press the ENTER button.

④ To exit this CHARACTER TABLE screen, press the ESC button.

6.6.5.4 PASSWORD

At the E-MAIL menu,

① Move the cursor to the PASSWORD using the ⬆ , ⬇ buttons to input the account password to be used by DVR.

② Press the ENTER button and the following screen appears.

③ Select the character using the ⬆ , ⬇ , ⬅ , ➡ buttons and then press the ENTER button.

④ To exit this CHARACTER TABLE screen, press the ESC button.

6.6.5.5 DVR E-MAIL ADDR

At the E-MAIL menu,

① Move the cursor to the DVR E-MAIL ADDR using the ⬆ , ⬇ buttons to input the e-mail address to receive the e-mail when an event happened.

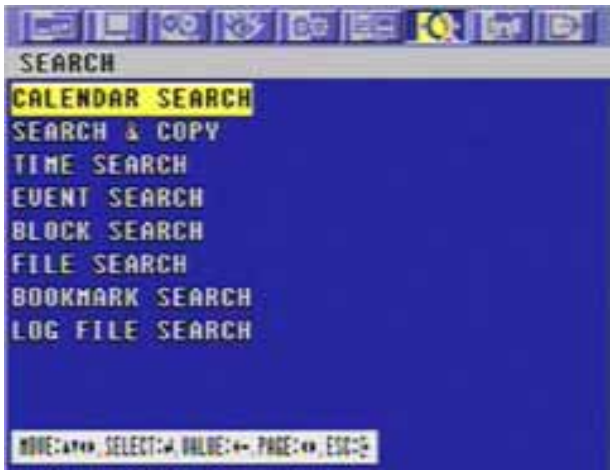
② Press the ENTER button and the following screen appears.

③ Select the character using the ⬆ , ⬇ , ⬅ , ➡ buttons and then press the ENTER button.

④ To exit this CHARACTER TABLE screen, press the ESC button

6.7 SEARCH

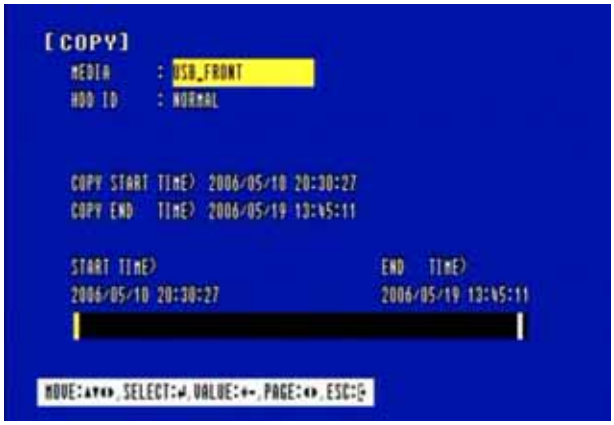
To set up the SEARCH menu,
① Move the cursor to the SEARCH icon using the ⬅ , ➡ in the MENU screen.
② Press the ENTER button when the cursor is on the SEARCH icon and the following items appear.



** Please, refer to Search & Playback of Chapter 5 Operation.

6.8 COPY

To set up the COPY menu,
① Move the cursor to the COPY icon using the ⬅ , ➡ in the MENU screen.
② Press the ENTER button when the cursor is on the COPY icon and the following items appear.



** Please, refer to Copy of Chapter 5 Operation.

6.9 EXIT

At the MENU screen,
① Move the cursor to the EXIT icon using the ⬅ , ➡ buttons.
② Press the ENTER button when the cursor is on the EXIT icon and the following items appear.

③ Move the cursor to the desired item using the ⬆ , ⬇ buttons and press the ENTER button.
- SAVE ONLY : Select this item if you want only to save the changed setup.
- SAVE AND EXIT : Select this item if you want to save the changed setup and exit this screen.
- EXIT WITHOUT SAVE : Select this item if you want not to save the changed setup before exiting this screen.

Chapter 7 External Terminal Information

7.1 RS-422/485

This port can be used to connect the external controller.

NO.	RS-422/485 / T-ADJ / RELAY OUT
1	TX +
2	TX -
3	GND
4	RX +
5	RX -
6	GND

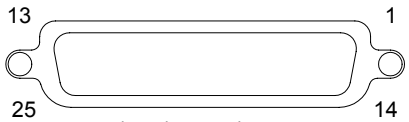
7.2 T.ADJ

NO.	RS-422/485 / T-ADJ / RELAY OUT
7	T - ADJ - IN
8	T - ADJ - OUT

This function is not supported.

7.3 RELAY OUT

For controlling alarm output by relay.



RS-422/485 / T-ADJ / RELAY OUT

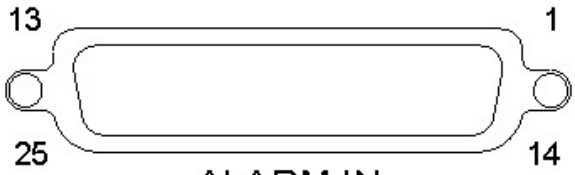
NO.	RS-422/485 / T-ADJ / RELAY OUT	
9	NC 1	ALARM
10	CM 1	
11	NO 1	
12	NC 2	V - LOSS
13	CM 2	
14	NO 2	
15	NC 3	MOTION DETECTION
16	CM 3	
17	NO 3	
18	NC 4	POWER / HDD ERROR
19	CM 4	
20	NO 4	

7.4 ALARM

16CH for alarm 1 to alarm 16

8CH for alarm 1 to alarm 8

4CH for alarm 1 to alarm 4



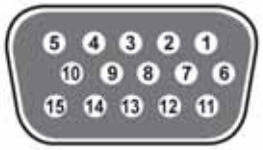
ALARM IN

NO.	ALARM IN
1	ALARM 1
2	ALARM 2
3	ALARM 3
4	ALARM 4
5	GND
6	ALARM 5
7	ALARM 6
8	ALARM 7
9	ALARM 8
10	GND
11	ALARM 9
12	ALARM 10
13	ALARM 11
14	ALARM 12
15	GND
16	ALARM 13
17	ALARM 14
18	ALARM 15
19	ALARM 16
20	GND

7.5 VGA

This DVR is compatible with TFT LCD monitor in PAL mode.
This DVR supports 1024 x 768 resolution & 70Hz refreshed rate in NTSC/PAL mode.

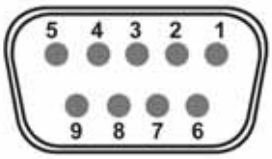
VGA



No	DESCRIPTION
1	RED(Red Video [75ohm, 0.7Vp-p])
2	GREEN(Green Video [75ohm, 0.7Vp-p])
3	BLUE(Blue Video [75ohm, 0.7Vp-p])
4~12	Reserved
13	HSYNC or CSYNC(Horizontal or Composite Sync.)
14	VSYNC(Vertical Sync.)
15	Reserved

7.6 SERIAL

This DVR is compatible with TFT LCD monitor in PAL mode.



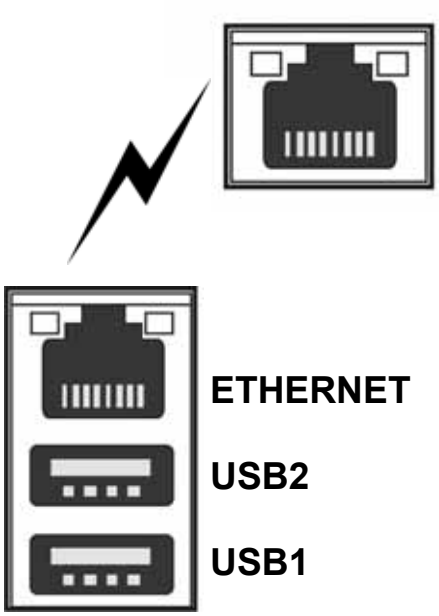
SERIAL

No		Description	No		Description
1	DCD	Data Carrier Detect	6	DSR	Data Set Ready
2	RxD	Receive data	7	RTS	RS232C: RX/TX data
3	TxD	Transmit data	8	CTS	RS232C: RX/TX data
4	DTR	Data Terminal Ready	9	RI	Ring Indicator
5	GND	Signal Ground			

(Reserved function, only to technical personnel for debug use.)

7.7 Ethernet / USB

For both 10Base-T and 100 Base-TX.

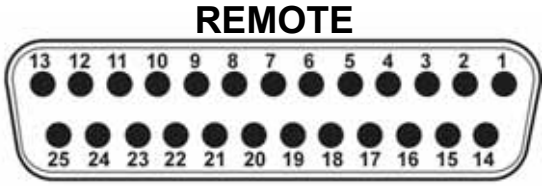


No	DESCRIPTION
1	N/C (Not Connected)
2	N/C (Not Connected)
3	RX-(Receive Data-)
4	N/C (Not Connected)
5	N/C (Not Connected)
6	RX+(Receive Data+)
7	TX-(Transmit Data-)
8	TX+(Transmit Data+)

No	DESCRIPTION
1	VCC
2	USB DATA -
3	USB DATA +
4	GND

Note: Definition (under Menu option):
USB1 = USB_REAR1
USB2 = USB_REAR2

7.8 REMOTE



No	DESCRIPTION
1, 2, 3, 4, 5, 6, 7, 8	Input Data 1~8
9, 10, 11, 12	Output Data 1~4
15	Time adjust input(slave)
16	Time adjust output(master)
13, 14, 17, 18, 19, 20, 23	N/C
21, 22	DC +5V Output
24, 25	GND

Reserved Function
N/C : Not Connected

Chapter 8 Specifications

1. VIDEO		
Input Level		1.0 Vp-p±10% Composite, 75Ω Balanced
Video Standard		NTSC(525 lines)/ PAL(625 lines)/ AUTO
Display Speed	NTSC	480/ 240/120 (16/ 8/ 4CH Real Time)
	PAL	400/ 200/100 fps (16/ 8/ 4CH Real Time)
Display Resolution	NTSC	720(H) X 480(V)
	PAL	720(H) X 576(V)
Monitor Output	Main	1.0Vp-p Composite, 75Ω Balanced (YC Output)
	Spot	1.0Vp-p Composite, 75Ω Balanced
	VGA	Analogue non-interlaced RGB. This DVR is compatible with TFT LCD monitor that support 50Hz VGA mode in PAL
2. AUDIO		
LINE Input Level		0.5~1.4Vp-p@20kΩ
Output Level		-10dB 1KΩ
3. RECORDING		
*1 Compression Method		Motion JPEG (MJPEG)/ MPEG4 (Refer to the below table)
*2 Recording speed		Refer to the below table
Quality	User Define	Low/ Fine/ Superfine
Scheduling		Available per hour/ each channel
Mode		Manual/ Event(Motion detection, Video loss, Sensor)/ Schedule
Water Marking		Support
4. HDD		
Capacity	Internal Storage	1 Removable HDD(option) + 4 HDDs
	External Storage	40 HDDs (10 HDDs in an external bay x 4) (option)
Speed		Min. 5400RPM, 7200RPM
DMA		45MHz DMA
Type		EIDE compatible
Seek time		Faster than 9.0ms avg.
External Bay Interface		USB 2.0
5. ALARM		
Sensor Input		16/ 8/4CH (DSUB-25)
Alarm Output		4 Relay out (Programmable), DSUB-25
Motion Detection		Available per each camera/ Multi-detection level
6. CONNECTORS		
Video Input	Main	BNC 16/ 8/4ports
Loop Output		BNC 16/ 8/4ports
Monitor Output	Main	BNC 1 port
	Spot	BNC 1 port
	S-Video	BNC 1 port (4 pins mini DIN)
	VGA	BNC 1 port (15 pins female DSUB)
Audio Input		RCA 4 CH : Rear 4 port
Audio Output		RCA 1 CH : Rear 1 port
USB 2.0		HDD extension/ Mouse/ USB memory stick/ CD-RW/ DVD-RW (Front 1 port, Rear 2 ports)

-

SPECIFICATION

Remote		Reserved
Serial		External control (RS-232C) / For debugging : 9 pins male DSUB
PTZ control		RS-485
Alarm Input		16/ 8/4CH
Alarm Output		4 Relay output : 3 pins terminal block (Normal-Open, Normal-Close, Common) x 4
Ethernet		RJ45 connector, 10/100 Mbps
7. ELECTRICAL		
Power Source		110~220VAC (50~60Hz) : Auto-detection
Power Consumption		App. 70W(Including 1 HDD)
8. ENVIRONMENTAL		
Operating Temperature		5°C ~ + 40°C
Storage Temperature		-10°C ~ + 60°C
Humidity		30 ~ 90%RH (non-condensing)
9. PHYSICAL		
Construction		iron case + front plastic panel
Color		Silver
Dimension		420(W) x 88(H) x 410(D) mm
Weight		App. 8kg (Not Including HDD)
10. BACKUP & COPY		
Digital Backup		Event Backup/ Mirroring
Copy		External HDD/ CD-RW/ DVD-RW/ USB Stick (2.0)
11. SEARCHING & PLAYBACK		
Searching Method		Time/ Event/ File/ Bookmark/ Log file
12. MULTI-REMOTE SURVEILLANCE		
Monitoring Environment		Client software/ Central monitoring system/ Web
Max. connection DVR		16 DVRs accessible
Max. client		Supporting multi-client (16 clients accessible)
13. SYSTEM MONITORING & RECOVERY		
System logging		Power failure checkable
Monitoring		2 independent Watchdog (Reliable Hardware Watchdog + Software Watchdog)
Recovery		Auto-Reboot by Watchdog/ Automatic database recovery
14. Others		
OS		Embedded Linux
Duplexer or Triplexer		Triplexer
Control Device		Front key/ Mouse/ Network viewer
File compatibility with PC (Windows)		Compatible
Number of event list/ Log file list		20,000/ 20,000

< Recording Speed Table >

Unit : fps

Model			16-CH DVR	8-CH DVR	4-CH DVR
Recording Speed	NTSC	360 x 240	120	120	120
		720 x 240	60	60	60
		720 x 480	30	30	30
	PAL	360 x 288	100	100	100
		720 x 288	50	50	50
		720 x 576	25	25	25
Compression Method			MPEG4	MPEG4	MPEG4

< Recording Time Table >

1. RECORDING CONDITIONS

Based on 120GB of storage with the installation of 1 camera.
This DVR can support up to 22TB with external HDD storage devices..

2. RECORDING TIME TABLE

VIDEO SIGNAL	RECORD IMAGE	IMAGE QUALITY	IMAGE SIZE	120fps(CIF)	60fps(CIF)	30fps(CIF)	15fps(CIF)
NTSC*	Color Bar	SUPERFINE	8448 Bytes	69 Hours	138 Hours	276 Hours	552 Hours
		FINE	6688 Bytes	85 Hours	170 Hours	340 Hours	680 Hours
		LOW	5344 Bytes	111 Hours	222 Hours	444 Hours	888 Hours
	Cross Hatch	SUPERFINE	37300 Bytes	15 Hours	30 Hours	60 Hours	120 Hours
		FINE	29400 Bytes	19 Hours	38 Hours	76 Hours	152 Hours
		LOW	22208 Bytes	25 Hours	50 Hours	100 Hours	200 Hours

** The NTSC signal mode is used for most of televisions produced in the U.S.*

- The figures in the Recording Time Table were estimated under ideal recording conditions and may vary from your actual recording situation.
- In the Recording Time Table, multiply by 2 for recording hours with an 240 GB HDD and 3 for recording hours with a 360 GB HDD.
- The complexity of the image and the amount of motion recorded greatly influences the recording capacity of your hard drive (HDD). The higher the frames per second and the higher the video quality setting, the lower your HDD recording capacity will be. In the same manner, the lower the frames per second setting and the lower the video quality setting, the higher your HDD recording capacity will be.
- Note that the lower frame rate does not mean a lower video quality. The image quality remains the same whether the frames per second setting is set high or low. One frame per second is the same as taking a photo every second.
- There are several factors that influence the recording capacity of your hard drive.
  (a) The number of cameras used
  (b) The complexity of the recording image
  (c) The number of frame recorded per second
  (d) The image quality setting – Superfine, Fine or Low

8.1 INSTALL the INTERNAL HARD DISK DRIVE(s).

Note:
(Set the master or slave of HDD before fixing the HDD(s) into DVR. Refer to HDD jumper settin g information.)
Note: Set up no. 1 and 3 by master and no. 2 and 4 by slave.

PCI SLOT	Description	Jumper Setting
A	For Removable HDD (Optional)	Master
B	For Fixed HDD (1 and 2)	No.1 for Master and No.2 for Slave
C	For Fixed HDD (3 and 4)	No.3 for Master and No.4 for Slave

When installing the HDD, format it before operation (It is suggested, once the HDD has been installed, unless necessary, do not replace the HDD).

HDD Jumper Setting Information

Before install the Hard Disk Drive(s), please read the jumper setting information on the label. If the jumper is not set properly, the system will be disordered. Jumper setting is different according to HDD model.

Please visit following web sites of Hard Disk Drive manufacturer for more information about jumper setting.

HITACHI : www.hitachi.com
MAXTOR : www.maxtor.com
SAMSUNG : www.samsunghdd.com
SEAGATE : www.seagate.com
WESTERN DIGITAL : www.westerndigital.com

Chapter 9 Network Viewer

9.1 INSTALLATION of NETWORK VIEWER SOFTWARE

9.1.1 System requirement

- Pentium III or above recommended
- ***O/S : Microsoft Windows 2000 / XP***
- ***128MB RAM or above recommended***
- ***Super VGA 16M or above recommended***
- 10/100 base T network card for LAN operation

9.1.2 Network Environment

	Client PC	DVR
Minimum	More than 1Mbps	More than 0.5Mbps
Recommended (16 Frames/Sec)	More than 3Mbps	More than 3Mbps

∗ Transfer rate of image varies with the number of client accessed to DVR.

NOTE : The software, Dvrviewer® is compatible with Microsoft Windows 2000 / XP.

9.1.3 Installation

To start the installation,

① Start Windows 2000 or XP
② Insert Dvrviewer Software CD into the CD-ROM drive
③ Install Dvrviewer and locate the Dvrviewer.exe file on your PC screen.
④ Simply double-click the icon to start.
⑤ Dvrviewer main menu controller will appear on the screen.

9.2 CONNECTING to DVR

Please double-click the icon of Dvrviewer, and then the following main menu controller will appear on the PC screen.

9.2.1 ADD a NEW SITE INFORMATION

① Click the “Select a DVR” button to display the DVR List on the screen.
② Fill out Type, DVR Name, IP address and Password to add the desired units into the DVR information box, and then click on the “Add” button to save the information.

9.2.2 CHANGE the SITE INFORMATION

① In case of any changes, type new information into the box after selecting the desired DVR on the list.
② Click the “Change” button to save the changes.

9.2.3 DELETE the SITE INFORMATION

① Select the desired DVR on the list, and then click the “Delete” button to erase the information on the list.

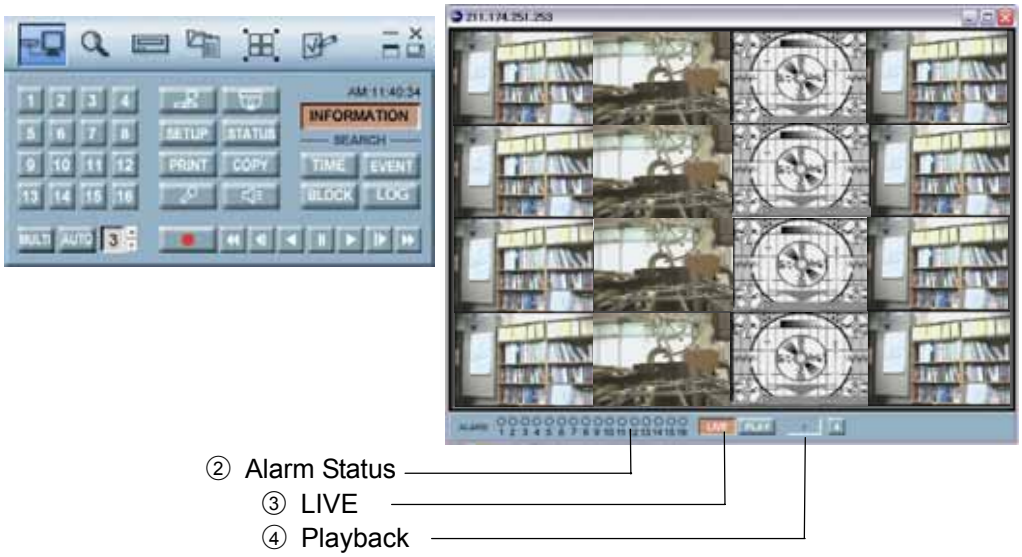
9.2.4 CONNECT to a DVR.

① Select the desired DVR that you want to connect in the “DVR list”.
② Select the necessary Information according to the connection type.
③ Click the “Connect” button or to access the DVR and the images screen will be displayed.

NOTE
You can connect 16 x 16(16 users x 16 units) windows at the same time but Master viewer is only one by user.
PASSWORD
- The default password is either of 11111111(Master password) and 22222222(Supervisor password).
- To change the password, please refer to the **PASSWORD** setup in Chapter 6 Set up MENU.
- The password must be the same as the registered site password.

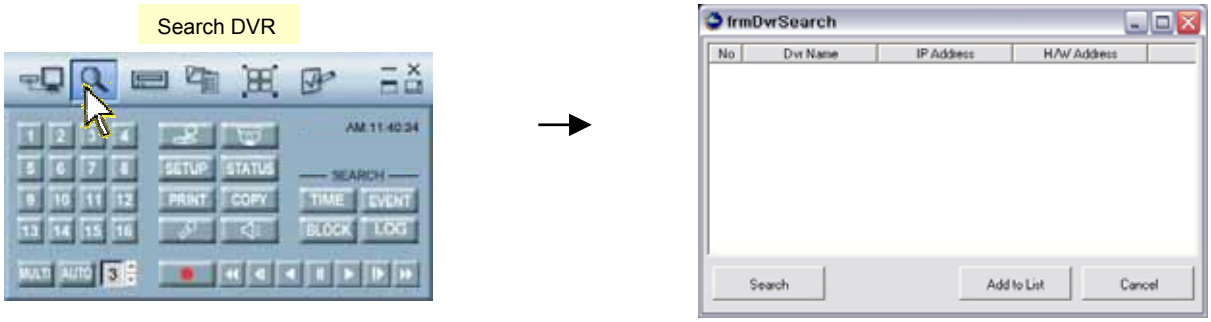
9.2.5 VIEWER SCREEN

① Click the button to see the full view window with control bar.



9.3 DVR SEARCH

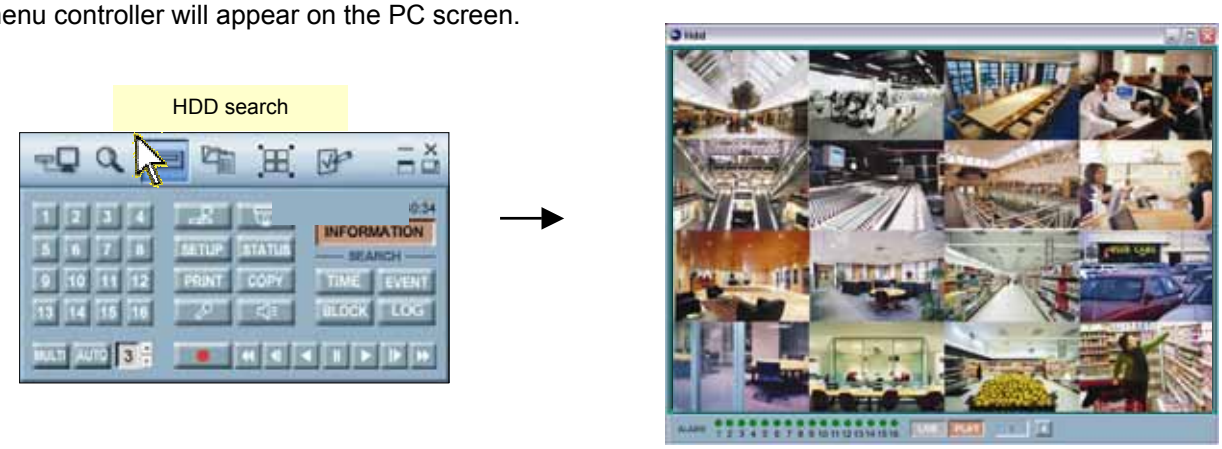
This menu allows you to detect all the units on the local network.



① Click “Search DVR” button to display the “Search” menu window.
② Click the “Search” button, and then all the units on the local network will be detected and listed on the screen.
③ Click the desired unit, and then click the “Add to list” button to add the unit into the “DVR list”.

9.4 HDD SEARCH

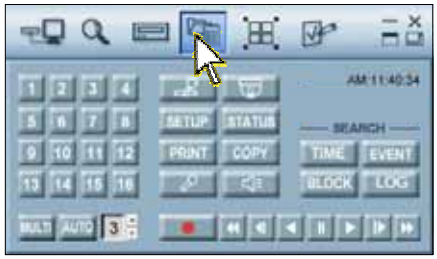
Connect DVR’s HDD with local PC, and then please double-click the Dvrviewer icon and the main menu controller will appear on the PC screen.

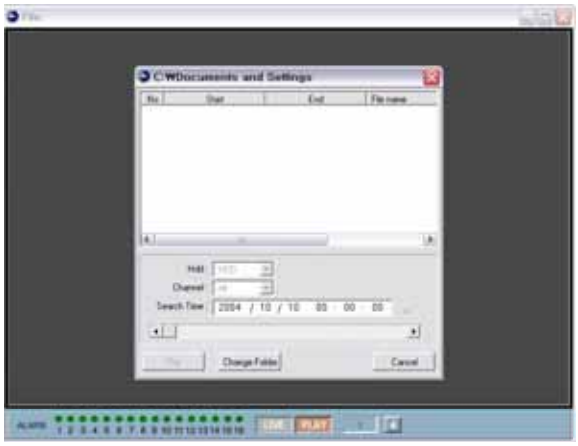


① Click the “HDD search” button and the view screen of HDD detected will appear on the PC screen.
② Click the desired one of the “SEARCH” buttons and SEARCH window will appear on the PC screen.
③ Click the Play button after select of the desired Channel and Search Time in Time Search window.
④ Click the Search button after select of the desired Channel, Event type and Search Time in Event Search window and then click the Play button after select of the desired list.
If you want to see the next list, click the Next button before playing.
⑤ Click the Search button after input of the desired Search Time in Block Search window and then click the Play button after select of the desired list.
If you want to see the next list, click the Next button before playing.

NOTE
- You can directly install the removable HDD rack from DVR to PC if compatible rack guide is installed on the PC. In this case, please check the jumper setting for proper operation.
- You can also simply use external IEEE1394 HDD reader.

9.5 FILE SEARCH





At the above main menu controller,

① Click the “File Search” button and the “File list” window will appear on the PC screen.

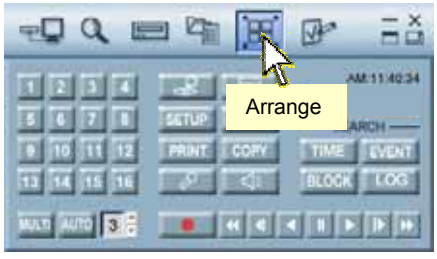
② If you want to search images saved in CD-RW, DVD-RW or PC, insert the CD or DVD into your PC and click the “File Search” button and the File Search window will appear.

③ Click the “Folder Select” button and then select the desired folder and then click the “OK” button.

④ Select the desired list and then click the “Play” button.

9.6 ARRANGE the SCREEN

Use this button when you want to arrange the view screens.



Shown above is the main menu controller,

① Click the “Arrange” button when you access more than one DVR and the windows are arranged in a grid on your PC screen.

* 1 site windows

* 2 ~ 4 site windows

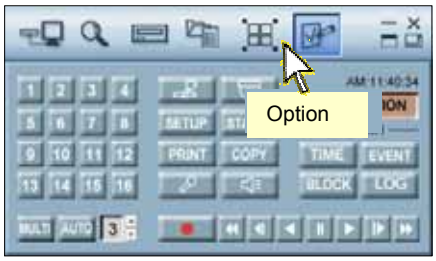
*5 ~ 9 site windows

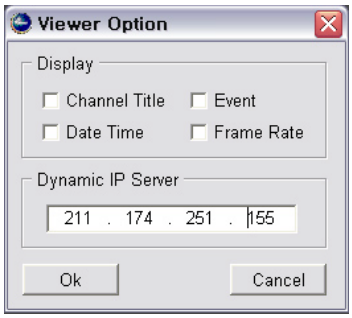
*10~16 site windows

NOTE - You can connect up to 16 DVRs with your PC simultaneously.
(16 users x 16 units: Master connection is only one.)
- With the windows arranged in a grid, double-click the desired to make it the full screen

9.7 OPTION

Insert the CD into the CD-ROM drive, and then please double-click the icon of Dvrviewer and the following main menu controller will appear on the PC screen.





① Click the “Option” button to change the other MENU setups.
② Check the desired Option and then click the OK button.
- Channel Title: If you check “Channel Title”, the title of each channel will be displayed on the viewer screen.
- Event: If you check “Event”, red OSD will be indicated on the event channel screen when any event detected.
- Date Time: If you check “Date Time”, OSD of date and time will be displayed on the viewer screen.
- Frame Rate: If you check “Frame Rate”, transmitted frame rate will be displayed on the under bar of viewer screen.

9.8 CONTROL

9.8.1 Screen Display

Images can be viewed in a full or multi format on each screen.

a. Full screen display

- Click the desired channel button and the full screen of the channel will be displayed.

b. Multi-screen display

① Click the “MULTI” button and the multi-screen will be displayed.
② Click the “MULTI” button again to view other multi-screen.

NOTE
Selecting a Multi-display may slow down the updates as multiple connections are made to the DVR at the same time.

c. Auto Sequence display

① Click the “AUTO” button to view the full screen in sequence.
② Change the interval time using the ▲,▼ buttons.
③ Click the “AUTO” button again to exit this mode.

9.8.2 Controller

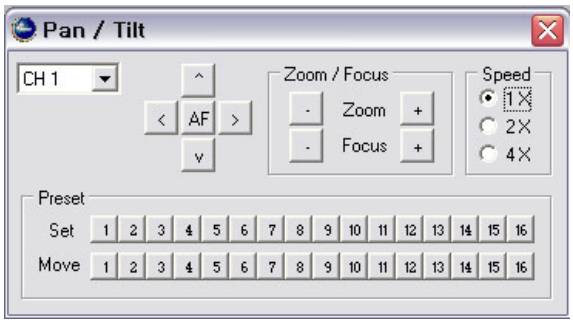
Click the “Controller” button and the control keys same as front panel of DVR will be displayed.

NOTE
If you need some more information about the control keys, please refer to Chapter 5 Operation.

9.8.3 PTZ

This menu allows you to control the PTZ camera through the network.

① Click the “PTZ” button to display the following PTZ controller.



② Click the ^ and v button to tilt up or down.
③ Click the < and > button to pan left or right.
④ Click the “ZOOM(- or +)” button to zoom in or out.
⑤ Click the “FOCUS(- or +)” button to obtain the clearest picture.
⑥ And then select the speed.

NOTE
You can enter the PTZ mode only while connecting the PTZ camera.

- Preset setup

A preset is user-defined camera position using pan and tilt, zoom, and focus commands. The DVR has programming capacity for 16 preset locations.

- Program a preset

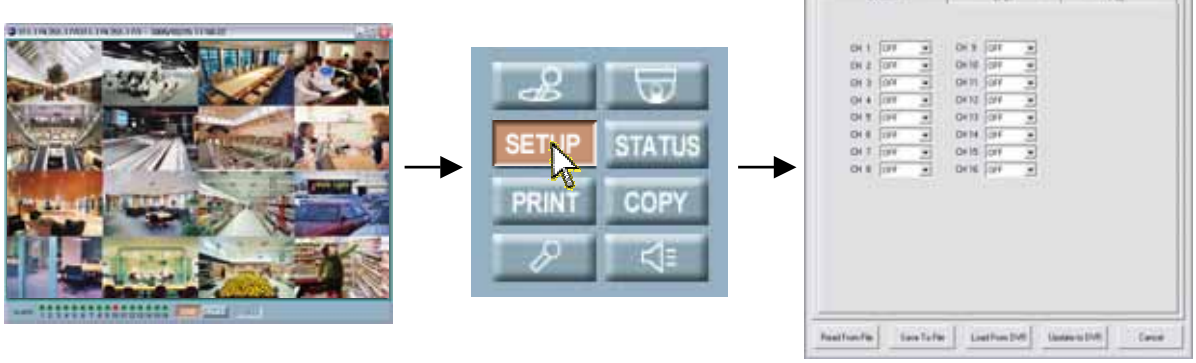
① Move the camera to a desired position using the PTZ control buttons.
② After setting the PTZ camera, click one of the desired “Set” buttons, 1~16 of Preset.
③ To continue setting the preset camera, click another “Set” button after ①. (Repeat ① and ②)

- Move to a preset

① Click one of the “Move” buttons to move to the desired setting.
② The camera will move to the programmed preset position.

9.8.4 SETUP

You can modify DVR MENU setup through the network.



① Click the “SETUP” button on the control menu bar to display the DVR setup screen after connecting the view screen. (It is possible only for master connection.)
② Click the “Save to file” button to store the current setup values.
③ Click the “Read from file” button to reload the stored setup values.
④ Click the “Load from DVR” button to call the current setup values from connected DVR.
⑤ Once the setup values are modified, click the “Update to DVR” button to update those values into the DVR.

9.8.4.1 How to download firmware

① Click the “SETUP” button on the control menu bar to display the DVR setup screen after connecting the view screen. (It is possible only for master connection.)
② Click the DOWNLOAD tap and you can see the “Firmware Download” button.
③ Click this “Firmware Download” button and browser window to find the desired file will be displayed.
④ Select the downloading file and click the “OPEN” button to download.

NOTE
Please refer to Chapter 6 MENU setup for more information about DVR menu setup.

9.8.5 STATUS

① Click the “STATUS” button on the control menu bar to display the DVR status after connecting the view screen.

9.8.6 PRINT

After connecting the view screen,
① Click the “PRINT” button on the control menu bar to print the desired image.
② And the preview window will be displayed as the above picture.
③ Set up the desired option and then click the Print button of the preview window.

9.8.7 COPY

After connecting the view screen,
① Click the “COPY” button on the control menu bar to copy the desired image.
② The Copy control window will appear.
③ Click the “Copy” button of the control window after setting the desired HDD and the time.

The copying percentage (%) is shown on the status bar.

9.8.8 AUDIO IN

After connecting the view screen,
① Click the “Audio In” button on the control menu bar to input the audio.
② Sound of your PC will travel into the DVR.

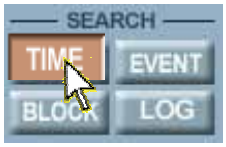
9.8.9 AUDIO OUT

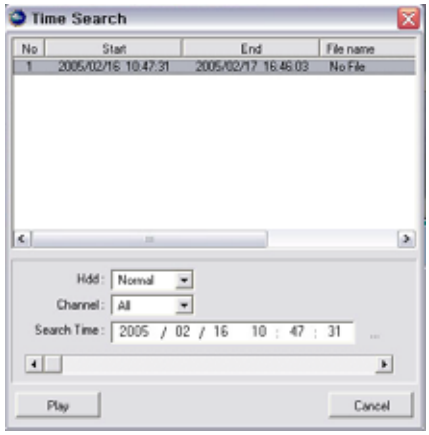
After connecting the view screen,
① Click the “Audio Out” button on the control menu bar to output the audio.

② You can hear the DVR sound from the speaker of your PC.

9.8.10 TIME SEARCH

You can search and playback the images by the time.





After connecting the view screen,

① Click the “TIME” button on the control menu bar to display the Time Search window.
② Select the desired HDD mode in the HDD dropdown list, and then click the “Search” button.
③ When the recorded time information appears, select the desired “HDD” and the “Channel” and set the “Search Time” for playback.
④ Click the “Play” button to display the images on the screen.

9.8.11 EVENT SEARCH

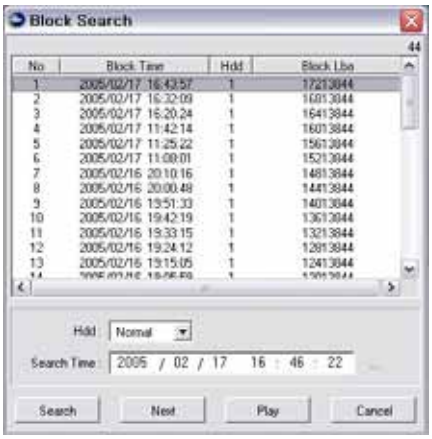
You can review the event list that was triggered on the DVR.

After connecting the view screen,

① Click the “EVENT” button on the control menu bar to display the Event Search window.
② Select the desired HDD mode, Channel and the Event type in Event Search window, and then set the Search Time
③ And then click the “Search” button.
④ When the recorded event list appears, select the desired list.
⑤ Click the “Play” button to display the images on the screen.

9.8.12 BLOCK SEARCH

You can search and playback the images by the block.

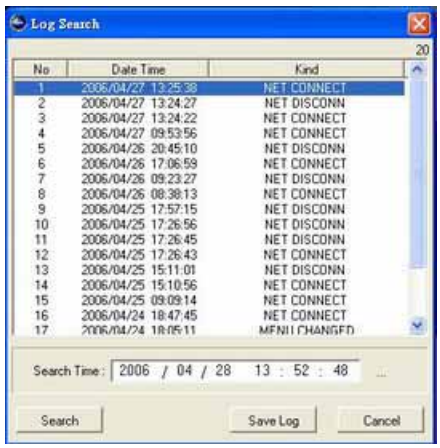


After connecting the view screen,

① Click the “BLOCK” button on the control menu bar to display the Block Search window.
② Select the desired HDD mode and set the Search Time, and then click the “Search” button.
③ When the list appears, select the desired list.
④ Click the “Play” button of Block Search window to display the images on the screen.
⑤ Click the “Next” button to search the next list.

9.8.13 LOG SEARCH

You can search and playback the images by logging.



① Click the “LOG” button on the control menu bar to display the Log Search window.
② Set the Search Time, and then click the **Search** button.
③ Click the “Next” button to search the next list.

NOTE: When the DVR is in Setup mode, this search function will not be performed.
- Normal HDD: Hard Disk Drive installed in the DVR
- Backup HDD: Hard Disk Drive installed in the DVR to backup(Event backup or Mirroring).
- R-HDD: Removable Hard Disk Drive installed in the DVR

9.9 KEY INFORMATION

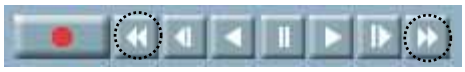
9.9.1 PAUSE

① Click this button to pause the images during the playback or live.

9.9.2 PLAY (Reverse & Forward)

① Use these buttons to playback images at normal speed in either direction.

9.9.3 FAST (Reverse & Forward)



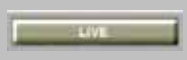
① Use these buttons to playback images faster than normal speed in either direction.
② Multiple clicks of these buttons will increase the fast forward & the reverse speed.
③ Various fast speed from x2 up to x128.

9.9.4 SLOW (Reverse & Forward)

① Use these buttons to playback images faster than normal speed in either direction.
② Multiple clicks of these buttons will decrease the fast forward & the reverse speed.
③ Various slow speed from x2 up to x128.

9.9.5 RECORD

① To store the still image of a channel into the remote site PC, click this Record button.
② Click the Record button again to stop recording.
③ The images will be stored in the save folder of your PC (Saved in the “save” folder under directory “Dvrviewer” (…/ Dvrviewer/ save)).
④ Click the FILE Search button to find the saved images (Please refer to 9.5 File Search, page 90).



- During the playback mode, click the LIVE button to convert the screen into the live display mode.
- You must use this Dvrviewer to replay the stored images in the PC.

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2 Year Limited Warranty

Channel Vision Technology will repair or replace any defect in material or workmanship which occurs during normal use of this product with new or rebuilt parts, free of charge in the USA, for two years from the date of original purchase. This is a no hassle warranty with no mail in warranty card needed. This warranty does not cover damages in shipment, failures caused by other products not supplied by Channel Vision Technology, or failures due to accident, misuse, abuse, or alteration of the equipment. This warranty is extended only to the original purchaser, and a purchase receipt, invoice, or other proof of original purchase date will be required before warranty repairs are provided.

Mail in service can be obtained during the warranty period by calling (800) 840-0288 toll free. A Return Authorization number must be obtained in advance and can be marked on the outside of the shipping carton.

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